

Guy's and Sussex links to be strengthened

by Clive Cookson
science correspondent

The informal links that have grown between Sussex University and Guy's Hospital Medical School are likely to be strengthened soon by the establishment of a joint working party to investigate collaboration.

Representatives of both sides met recently under the aegis of the South East Thames Regional Health Authority and agreed to set it up. The relevant bodies at the two institutions have yet to give approval. The feasibility of certain collaborative ventures would be considered, including:

- admission of Sussex BSc graduates, who have taken an appropriately constructed biology or biochemistry major, to a shortened medical course at Guy's;
- admission of Guy's students after the bachelors of medicine in take a shortened BSc course at Sussex;
- training of scientists for careers in medical research, and extended contact between researchers.

The planning committee of Sussex has already agreed that the university should join such a working party and that its representatives should be Professor M. W. Thompson, Professor R. J. Cole and Dr J. A. P. Trafford.

Both institutions, and particularly Guy's are very reluctant to talk "on the record" about the long term implications of collaboration, and

the possibility that Guy's might eventually move to the South Coast.

In 1971 the university agreed as a policy objective to increase its involvement in medical science and ultimately to have its own medical school. It recognised that the University Grants Committee was not going to provide the cash to build a new medical school in the foreseeable future and that the way ahead was to develop contacts with a London medical school at the same time as extending its own quasi-medical facilities. Grants for medical research at Sussex now total £300,000 a year.

At the same time the 12 London medical schools have become increasingly worried about their future, as pressure has increased for a substantial shift of health resources from the capital to the provinces. Guy's also has the problem of raising the old and its adequate accommodation for its academic departments.

Informal contacts have developed steadily between research workers at Guy's and Sussex over recent years, helped by the fact that both lie within the SE Thames health region and by the good rail links between London Bridge and Brighton.

Guy's sends students to Brighton hospitals for some of their later clinical training and the medical school lent assistance when the university set up its medical physics course.

Cuts have hurt 'but not seriously'

by David Walker



Education has been hurt but not seriously by recent cuts in spending, according to Mrs Williams, Secretary of State for Education, in a speech last week in the North of England Education conference. She said that those who grow fat often find slimming most difficult.

In a catalogue of education's achievements in recent years Mrs Williams said: "I am convinced we have resources enough to make our next priority an improvement in quality parallel to the remarkable improvement in its quantity."

In the course of doing so, we have to use to advantage the marked decline in the birth rate which by 1981 will entail fewer children in primary and secondary schools than there are today."

Achievements included the great expansion of full-time higher education and the numbers of those following further education courses. There had been triumphs of imagination and constructive creation as well, she said, citing the Open University and the foundation of the Council for National Academic Awards.

Education spending had risen during a last decade by over a half while national output only increased by about a fifth. There had been recent cuts, but Mrs Williams repeated her promise to safeguard areas such as in-service training for teachers.

Looking ahead, she said demands made on the education service had

grown. Industry demanded more young people capable of more sophisticated work than formerly. "The needs of those who would once have been apprentices now take degrees at universities and polytechnics and that industry is selecting from the groups of school-leavers with more of the cream removed than was in a generation ago."

She amplified the Prime Minister's remarks last year on the curriculum, arguing that it was unwise for children to specialise too early and abandon either "one of the two great divisions of knowledge—the arts and the sciences."

The theme of education's high with industry surfaced again. Mrs Williams said: "The juxtaposition in our country of one of the longest periods of compulsory education, productivity, low growth, low wages and marketing skills must make us a 'reflex'."

The theme was picked up by speakers at the conference, held this year at the Modely College of Education in Staffordshire. Arthur Bryan, chairman of Wood Ltd, the printers, argued in an education system had failed to keep up with changes in industry.

He complained that recruits were often inadequately prepared and to be given expensive remedial education to cure their illiteracy and innumeracy. Part of the blame lay with those who had established the grammar schools, he said.

Computer board calls for single linking network

by Clive Cookson
science correspondent

All universities and polytechnics in Britain should be linked in a single computer network, the Computer Board for Research Councils and Universities says in a policy document published this week.

University computing centres already share facilities on a regional basis, and the Computer Board has set up a unit with the Science Research Council to recommend how to extend these links to form a national network (HES) December 17. But until now most polytechnics have had to fend for themselves and buy computing equipment with scarce local authority funds.

Now the board wants to take the polytechnic under its wing. Terminals could be provided to link the 20 polytechnics with each other and the universities in the national network at a cost of £5,000,000, the report says. There are many research workers in polytechnics who need access to the same range of computing facilities as the users in universities; they could be given the opportunity to share advanced and expensive computing facilities and the major machine in polytechnics could, moreover, become important components of the network.

The report has been published at a time when the board's recurrent costs are rising at a staggering 32 per cent a year from the £2.5m level of £5.2m. The board members made clear at a press conference, their short-term priority must be to sort out this cash crisis.

The chairman, Cranfield's vice-

chancellor Dr Henry Clilver, said decisions are taking place within the Department of Education and Science on the financing of recurrent costs; at present they are split about 50:50 between the board and the University Grants Committee (the board pays for almost all new computing equipment).

Meanwhile universities are desperately trimming costs where they can, for example by cutting maintenance during evening and night shifts, and hoping faults show up during the day.

The board estimates that all its proposals could be fully implemented if capital expenditure is maintained at the present level of about £10m a year, but it recognises that the Government cannot continue to support university computing at any specific level over the next 10 years.

Financial priority should be given to increasing the range of facilities available, such as data storage and manipulation systems and special input and output devices. This is more important than increasing the calculating power of university computers, the board believes.

So far the board has had to work within the Government's "buy British" computer procurement policy, whereby all large computers have to be bought from ICL (International Computers Ltd) unless it can be proved that a foreign machine would be significantly better in terms of cost, performance or delivery date.

Computers in Higher Education and Research: The Next Decade. HMSO Price 60p.

Council goes ahead with new Bar diploma to replace exam

by Sue Reid

The Council of Legal Education is going ahead with plans to introduce a new diploma in Law for students with non-law degrees which will replace the present part-time Bar examinations.

Courses leading to the new diploma, which is part of the Law Society's new policy of limiting entry to the profession to graduates, will be launched at the City University and the Polytechnic of Central London next October.

The council's move has come in spite of the recent decision by the Law Society in response to its plans for legal education in 1974 that students after 1980, it was originally intended to introduce a Common Professional Examination for non-law graduates which would have been recognized by both branches of the profession. The CPE would also have replaced the Law Society's part-time diploma which is due to be discontinued until 1978 at least.

The new diploma in law will, however, be similar to the hospital-for-CPE. Bar students with non-law degrees will take a one-year course on a full-time basis to study the six core legal subjects.

Commenting on the new diploma the Council of Legal Education said: "We recognize and understand the difficulties facing the Law Society which has caused it to reach these decisions. The council, however, has already announced that students with non-law degrees other than those who will no longer be eligible to become Bar students."

The council had also said that it intended to transfer the "academic" stage for Bar students to academic institutions in September, 1977.

Students unite in Ulster peace campaign

Students in England and Northern Ireland will join together in a campaign for jobs, peace and progress, which hopes to banish the idea that students are supporters of the Provisional IRA.

Though the campaign is a student one, the NUS hopes it will help students to work alongside trade unionists in their "Better Life for All" campaign. There will be public meetings, teach-ins, leafleting and possibly demonstrations.

Miss Sue Sloman, NUS secretary, said this week that the campaign aimed to promote understanding of difficulties faced.

The NUS supports the withdrawal of British troops in Northern Ireland and believes that the troops should be under greater political control.

Third World's concern emphasized

by Jone Feinmann

The role of education was the main preoccupation of many Third World leaders, a British professor of development studies said last week at the annual conference of the World University Service (UK).

Most of the developing nations were now suffering, on a greater scale, many of the ills which hobbled Western education, such as the unemployment of school leavers and rising costs, as well as a growing rate of inequality of opportunity.

Professor Richard Jolly, of the Institute of Development Studies, University of Sussex, said the confused state of education in Third World was highlighted by the anomalies—for the most part students who exceeded the minimum wage and university graduates could expect to earn over 15 times as much as the unskilled labourer.

He said that immediately after independence, qualified school leavers had been snapped up but five years later the situation had changed. In Sri Lanka 80 per cent of young people between 15 and 20 who had O-level qualifications and were actively seeking work were unemployed last year, a situation mirrored in many countries.

Mr Jolly said that in education had been devastated. Zambia's had increased 49 times as much as Britain's. In the past 15 years since many African countries had become independent the shore of national income going on education had doubled.

But most Third World countries still vastly underinvest on school equipment, particularly textbooks. Most of the extra money had been spent on increased teachers' salaries.

The British Council's operations in Chile were described by Mr Alan Angel, fellow of St Antony's College, Oxford, and secretary of the Academics for Chile campaign. About 40 Chilean students from universities supported by the Chilean military junta are currently studying in Britain with grants from the British Council.

He said the level of repression in universities in Chile was enormous, and there were very few students now attending university whose parents would be of all respectable in Chile. It was likely that the British Council would send over students to spy on Chilean economic refugees.

Mr Angel said the British Council's presence in Chile also legitimized their government. He stressed that he was not quarrel with the British Council's activity per se, but he believed that the British Council office in Santiago, one of the largest in South America, should be closed down.

WUS itself, as a member of the Joint Working Group for Chilean Refugees, had now given 500 awards to Chilean students and lecturers, imprisoned by the junta, of which 410 had been taken up. Awards to help the academics to settle in this country.

Mr Alan Phillips, general secretary of WUS UK, said the Chilean refugees scheme had taken up a great deal of time at WUS's central office. It is the most complicated of WUS's programmes. There is the language problem, the fact that most of the people we are helping are to be immigrants to this country, and the difficulties of arranging most of all, the fact that we are dealing with a Government which has no respect for human life."

Mr Phillips said that the Ministry of Overseas Development had recently announced that they would provide WUS with funds for 75 new awards to Chilean refugees. However, he said no longer provide funds, as they have done for the past two years, for grants to Chilean refugees in this country.

Nine leading members of the black South African students' organization, SASO, have been convicted within the Terrorism Act of charges under the Terrorism Act after the longest ever trial in South African history.

The trial, which began in June 1975 and ended a few days ago, came to be known in South Africa as "the black consciousness trial". It related to a rally held in 1974 at the University of Natal, Durban, when thousands of black students marched in support of Frelimo, the Mozambique Liberation Front.

Sir Robert Biley, national chairman of WUS, who described the trial at the conference, said he thought it was a great pity that it had received so little publicity in this country.

Sir Robert, who has taught in Soweto, said that SASO, formed in 1969, had become a great enemy of the South African Government. He had no doubt that the trial had been an attempt to finish it off. SASO at a Black People's Convention held in Soweto in 1970. It was this philosophy, Sir Robert said, which had been on trial; the prosecution consciousness "itself was dangerous to the state."

The conference saw a message of sympathy to the SASO leaders, who received sentences of between six and ten years, and their families. It was the first reaction of a British academic body to the trial.

Interview plays major role in choosing poly

The most important factor in a student's decision to go to a polytechnic is the impression he or she gains in an interview with members of its staff, according to a survey reported in *Trends in Education* published by the Department of Education.

Dr Michael Richards, of Lanchester Polytechnic found in a survey of upper sixth formers two years ago that the major influences in deciding to go to a polytechnic were the interviews, the polytechnic prospectus and visits by staff to schools.

Pupils applying to colleges and universities came under the strong influence of their subject teachers, friends at school and, not least, their parents in the spring before A level is actually taken.

Or Richards says: "The general picture is one of the established links where teachers, through their experience of college of education and university, consciously or subconsciously influence pupils to take the same paths."

One conclusion that institutions might draw from his work is the importance of the literature they put out in schools. The prospectus falls no lower than third in Or Richards's ranking of influences.

University influences are ranked as follows: main subject teachers; trial A-level results; prospectus; interview; friends at school; friends at university; head teacher; GCE O-level results.

Polytechnic influences: polytechnic interview; prospectus; visits by staff to school; friends at polytechnic; visits to polytechnics; main subject teachers; trial A-level results.

College influences: main subject teachers; friends at school; prospectus; head teacher; friends at college; form teachers; trial A-level results.

Trends in Education, December, 1976. DES £1.76.

Preceptors ask 'Suggestions'

The Council of the College of Preceptors is asking the Department of Education and Science to consider publishing an up-to-date version of its *Handbook of Suggestions for Teachers*.

In a letter to Mrs Williams, Secretary of State, on issues in the current education debate the council also says it believes tests of attainment in the main subject areas should be available for the use and suggests that the National Foundation for Educational Research should continue to develop a wide programme of tests.

The council considers the three Rs to be of fundamental importance in its report on the value of subjects in a satisfactory measure of the value of education.

"The Council, therefore, urges that there should be no hasty decision to institute tests contrived and administered by the department."

On in-service training, it urges the DES to arrange for adequate resources so that it can be available in all appropriate institutions. It is doubtful about in-service training being conducted solely within the school and using only the school's resources.

"School, it says, could have all the facilities of expertise, books, equipment and space needed. Help from outside agencies such as universities and colleges is available and should be used by individual schools.

Ratios will worsen in five ILEA polys, Newsam says

by Frances Gibb

Staff/student ratios will worsen in the five inner London polytechnics in 1977-78, according to Mr Peter Newsam, education officer for the Inner London Education Authority. In his report on the polytechnics for that year, accepted recently by the ILEA further and higher education subcommittee. Mr Newsam says that, after a period of relative stability, full-time and sandwich student numbers are increasing.

His estimate of 15,000 full-time and sandwich students in 1976-77 was exceeded by 500, and a further significant increase is expected next year.

At the same time, teaching posts are expected to be reduced to 100 below the 1974-75 level which, he says, "makes a further move towards more economical student/staff ratios."

Apart from teacher training staff, however, the five polytechnics' budgets for 1977-78 are to allow for staff numbers to be maintained at their present level.

Mr Newsam says he felt bound to resist any proposals for increases

in non-teaching staff, although he draws attention to the polytechnics' view that they are deficient in administrative and clerical support to the extent that their efficiency is impaired.

The salary and wages costs included in the polytechnics' grants are estimated at current pay levels, the report says. For academic staff they include some provision for "incremental drift", since the evidence is that normal increments can no longer be met from money saved on the salaries of retired lecturers.

The grants for the five polytechnics for next year amount to a total of over £34m. They are: Central London £7.97m, South Bank £7.6m, North London £7.8m, City £6.4m and Thames £5.6m.

Mr Newsam notes that for the first time the polytechnics and the authority had agreed a method of calculating the cost of a full-time equivalent student.

The cost per full-time equivalent student at each of the polytechnics for 1977-78 has been estimated at £2,183 at Thames, £2,014 at North London, £1,932 at South Bank, £1,836 at Central London and £1,721 at City of London.

Overseas appointments



The Hong Kong Polytechnic came into being on 1st August 1972 as an autonomous institution controlled by its own Board of Governors and financed by the Hong Kong Government through the University and Polytechnic Grants Committee. From a total of 1,700 full-time equivalent students in 1972, it has developed to accommodate 6,400 full-time equivalent students in 1978/77 and by 1978, the student target will be 7,800.

Applications are invited for lecturing posts in the following Departments (tenable from 1st September 1977).

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Principal Lecturer/Senior Lecturer/Lecturer in Chemical Technology.
- Building & Surveying**
Senior Lecturer/Lecturer in Building Technology (MIBO required).
Senior Lecturer/Lecturer in Building Services (MIBVE or equivalent required).
Lecturer in Land Surveying (ARCS preferred).
Lecturers with satisfactory experience will be considered.
- Business & Management Studies**
Principal Lecturer in Law, Transport Studies and Marketing.
- Civil & Structural Engineering**
Principal Lecturer in Structural Analysis and Design.
Senior Lecturer in Civil Engineering/Construction/Concrete Technology/Trafford Engineering/Highway Engineering.
- Computing Science**
Senior Lecturer/Lecturer in Systems Analysis, Data Processing, Programming, Systems Programming, Management Information Systems, Graphics, Computer Assisted Instruction and the Application of Computers in other disciplines being taught at the Polytechnic. (Re-advertisements).
(Applicants with experience in altering computer courses to the general public would be particularly welcome).
- Design**
Senior Lecturer/Lecturer in General Design. (Re-advertisements).
Senior Lecturer/Lecturer in General Design Studies and in General Product Design.
- Electrical Engineering**
Senior Lecturer/Lecturer in Heavy Electrical Engineering. (Experience in circuit theory, control or measurements and instrumentation required).
- Electronic Engineering**
Principal Lecturer/Senior Lecturer in Basic Electronic Engineering, Control and Instrumentation, Computer Engineering, Integrated Circuit Application and Fabrication.
- Languages**
Principal Lecturers/Senior Lecturers in English Language teaching to Commercial and Technical students.
- Textile Industries**
Principal Lecturer in Knitting Technology. (Re-advertisements).

Radical change in applied sciences urged

by Owen Surridge

Civilisation will come to an end unless the applied sciences are changed radically in the next 15 years, according to Professor Meredith Tilling, of Queen Mary College, London, who has delivered the annual Macmillan education lecture at Leicester University last week.

To help those engaged in applied science and engineering he has drawn up a humanitarian oath that would require allegiance to ideals of peaceful co-existence, humane dignity and self-interest. The oath would bind those taking it to eschew projects connected with war, destruction and the creation of armaments.

"At present some 40 per cent of the world's scientists are engaged in devising weapons of war," he

said. "There is something wrong with a conscience that permits activities of the kind on that scale."

He appealed for a new and enlightened technology, that would draw young people and their idealism to the cause of improving humanity's lot, emphasizing the need to encourage the young to think for themselves.

He was convinced that the answer lay in education and the development in young people both of the questioning mind and the personal conscience.

Present styles of education made the people we are helping are to be intelligent, in his view; the intellect was trained only in passive examinations, the emotions were tormented or all and physical optitudes only at the most obvious level. It was essential to devise an education that would bring all three into

equilibrium and to nurture the growth of the conscience which was essential to maturity.

Speaking of what he described as the dehumanized walk of the scientist, Professor Tilling said there was no hope of salvation there. They would always take the short-term view, looking from expedient to expedient, their only concern to change the pollution, he said, to change the other of the people; politicians do not lead; they follow. The alternative was large-scale destruction, pollution, warfare.

The fact was that the rich countries were over-rich and they could improve their lot by reducing their standards of living and sharing the benefits with the two thirds of the world that had yet to reach the stage of the industrial revolution.

TES produces careers guide

A book which aims to show the wide range of opportunities for careers in education is published this week. *The Times Educational Supplement Guide to Careers in Education* (Nelson £2.95) includes chapters on prospects in adult education, social work, universities and polytechnics, educational psychology, industrial training and youth and community work.

Oxford has £1m surplus

Oxford University had a surplus of nearly £1m at the end of 1975. The surplus, of £477,000 or 1.5 per cent of turnover, is the most part already committed, the report on the accounts for the year says.

Turnover rose to nearly £30m, a rise, due largely to inflation, of 28 per cent over the previous year.

Grants in aid from the University Grants Committee rose by almost £4m to £19,164,000, and there were significant increases in all other sources of income.

The report says it had been hoped that the UGC would give full compensation for the cost of the increase in academic and related salary scales, but supplementation fell short by £75,000.

The amount spent by academic departments and academic services rose by £4.4m.

Moderator joins devolution debate

The Church of Scotland has intervened in the debate over devolving control of Scottish universities to Edinburgh.

In a speech last week the Moderator of the General Assembly of the Church of Scotland, the Right Rev. Professor Thomas Torrance, said it would spell destruction.

"The affect would be to make the universities merely the top storey of the educational system, and reduce them to the status of glorified high schools."

Industry is 'undervalued'

A greatly increased stock of highly educated people in Britain could be damaging if in the process of being educated they gained an aversion to the way the country runs a living, Sir Alex Smith told television viewers last week.

Taking part in the first of 10 programmes entitled *The Education Debate* on BBC 1 Sir Alex spoke out against the undervaluation of industrial jobs and the current trend of popularity of scientific, engineering and other vocationally-orientated courses.

NEXT WEEK

- Bryn Groombridge an open learning
- Stoutley Johnson: Scottish FE students
- Bryan Turnbull on Nuffield physics
- British Association for the Advancement of Science supplement
- The work of the British Council: Five pages of history books Chinese students in Britain



Reports from the National Union of Students' policy committee conference

Universities Campaign launched to block tuition fee rise

by Frances Gibb

The National Union of Students has launched a campaign to press university authorities not to implement the proposed tuition fee increases. At a conference at Durham organized by the NUS for university students, Mr Trevor Phillips, vice-president in charge of overseas affairs, said that if some university authorities had not been agreed by mid-February, students would take direct action, including boycotts of lectures and occupations. He urged students to press for a commitment from university senates and councils that they would abolish the differential in fees between home and overseas students, that they would not implement a system of increases which would penalize successful students, and that they would increase fees for self-supporting postgraduates.

The conference was one of a series organized by the NUS last week to discuss problems affecting particular groups of students and to formulate policy. Polytechnic students are to take similar action on fees. Mr Phillips said that where self-financing students formed less than 10 per cent of the student population, it would be possible for universities to make up the money they would receive from fees out of their own resources.

Report criticizes 'cautious and secretive' CVCP

Self-supporting postgraduates

The Committee of Vice-Chancellors and Principals is criticized as a "cautious and secretive" body in a report by three members of the universities national committee on the administration of universities. The CVCP was ignored by the Government in the Altham report on Higher Education and in the White Paper on Higher Education. The committee should act as a "genuine" group and not as a "Government department" in the way it has been operating. The report says that the CVCP has been "cautious and secretive" in its handling of the Altham report and in its failure to publish the benefits of universities and higher education to the public. It also criticizes the CVCP for its failure to act as a "genuine" group and for its failure to publish the benefits of universities and higher education to the public.

Despite its wealth of intellectual and economic resources, it has maintained an extremely low profile, not wishing to get involved in major public debate and preferring to deal "within the corridors of power."

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'Atkinson threatens research'

by Sue Reid

The relationship between education and industrial training is a controversial one. The National Union of Students has a "right-wing" view which would encourage university research and scholarship. The conference rejected the Atkinson report on self-financing libraries as a "right-wing" view which would encourage university research and scholarship.

It called for a joint working party with the Association of University Teachers and the Standing Conference of National and University Librarians to reconsider a future programme for the libraries. Delegates highlighted the particular problems of their own university libraries. Durham was one of the first to have its plans for a new library axed, and had to cope with libraries on three sites. Present plans for space was impinging on teaching accommodation, in particular in Arts subjects.

At Dundee periodicals had been cut by 20 per cent over years and would be cut by 33 per cent next year, a delegate said. At Hull, where the library is also split, under new being used at common rooms in its Welsh library might not be deemed "useful" and have to be sent away. An Imperial College delegate said the main college library was being used to store some of its collections in departmental libraries, but this raised the problem of an overlap of interest between departments.

At Leeds it was feared that some of the special collections of manuscripts would have to be sent away, a delegate said. He also said it would take up to six weeks to obtain a book from the lending division of the British Library, where it is reported that surplus books will be stored.

There was the major difficulty at Newcastle. Students had to be taken to the library via a bus service, a delegate said. In order to do this there was a delegation area where students could relax after their journey. The small coffee bar had to serve the whole library.

Call for check on CIA

Students have called for an investigation of all interference by intelligence agencies in British universities.

The call comes when an article containing allegations of wide CIA involvement in student organizations is due to be published in next month's *National Student*, the NUS newspaper.

Mr Charles Clarke, president of the NUS, said: "Intelligence agencies are at work on most campuses in this country and we will do everything possible to expose them and root them out."

Apart from the CIA, agencies accused of infiltrating student organizations are the KGB, the BOSS (South Africa's Bureau of State Security) and SAVAK (The Iranian security organization).

Mr Francis Beckton, editor of *National Student*, who commissioned the article from Mr Phillip Kelly, a journalist at Interpress news agency, said much of the evidence came from the student union's own files. Intelligence organizations had taken a close interest in students over a long period.

Mr David Aaronovitch, the union's vice-president in charge of services, said it was believed that former members of the union and others involved in the student movement had extensive contacts abroad, unwittingly with British security agents.

Another example was of Iranian students at Leeds University, who had not registered as Iranian, but had used their own name for local newspaper reports from Iranian agents, he said.

Further education Industry must play role in training, TEC leader says

by Sue Reid

But he added: "We know in reality that 300,000 young people leave school every year with no prospect of industrial training. As much as Europa is concerned this country probably suffers the most abrupt division between school and work."

There have been verbal commitments by the Government to education and training but the fact has been a cut back in education spending and more money spent on industrial training schemes. The new school of thought is that training should be established in line with industry's short-term needs.

Mr Ashby maintained that the Training Services Agency, set up in 1973, was now wounding gravely. Designed to help industry meet its training needs and to improve training opportunities and methods, it had a £28.5m budget in 1976 and a staff of 7,600. It currently sponsored 35,000 young people in education.

Commenting on the decline of day-release courses Mr Ashby said that only 20 per cent of school-leavers in the 16 to 19 age group were now undertaking such education routes. The Government's pilot scheme of vocational preparation courses had been referred to as a "last-minute desperate" attempt to convince the rest of the world that something was happening but once this scheme was developed it would involve a tiny fraction of school leavers.

He concluded: "Educational advance can only be achieved by a real increase in the size of the business determining what is happening in this industry in education."

Attempt to strengthen FE's hand gains momentum

Attempts to strengthen the hand of the further education sector within the National Union of Students are gaining momentum at the NUS further education policy conference.

Showing increasing impatience over their lowly position within the NUS hierarchy, 200 delegates from further education colleges throughout Britain voted in favour of rejecting the annual report of the NUS further education national committee for the second year in succession.

Delegates criticized the FENC (Further Education National Committee) for failing to function effectively and questioned the high membership rate of committee members during their 15 months in office. Of the 150 delegates elected to the committee, only 100 were still in office at the time of the conference.

Mr Bill Thompson, one of the two remaining members, told the conference that some further education colleges were still unaware that FENC existed. He added: "The only way the further education sector is going to be improved is by campaigns but by ensuring the long-term aim that all students' unions have democratic structures."

The conference called for regular up-to-date information about the work of FENC and instructed the committee to distribute the minutes of its meetings to all further education colleges. Delegates demanded that the FENC committee should have a minimum attendance of five members.

A statement issued by the conference declared that a strong fight-back was needed to oppose the government and local education authorities using the crisis "to

Industry must play role in training, TEC leader says

by Sue Reid

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He concluded: "Educational advance can only be achieved by a real increase in the size of the business determining what is happening in this industry in education."

Hostel inmates 'must make rules'

Students living in further education college hostels should determine their own regulations, delegates of the National Union of Students further education national committee are producing a briefing document on hostel regulations and issuing a questionnaire among students to discover the rules operated.

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On the other hand

How to bitch

As part of my comprehensive service to readers, I now offer advice on how to write a bitching letter in times of bad review. As you know the prime equipment for any author is the capacity to crank out for three solid columns of caustic mud-slinging whenever attacked in print.

Letters columns of journals are frequently filled with scathing invective by the author of *Body Language in Llamas*, and the only other biter in the constituency who knows enough about it to disagree.

The aim is to compose such correspondence well after the original point of contention has been forgotten by the readers and one or both of the disputants (whom I shall hereafter call "Thickpacket" and "Fruttkicker") not because I fear the laws of libel, but because I do not want any of them to start writing to me.

Some, of course, need little instruction. One recent *THES* correspondent wrote that there were "not slightly over 200 pages in my book, *Thickpacket suggests*, but 211." I can then arrange, as he did, to go on in this vein for sufficient folios in paper a reasonably-sized bathroom cube that you have probably hit the bullseye.

However, for those of insufficient verbal dexterity to do this, the first play is to abandon all politeness. Never refer to your critic as "Professor Thickpacket" and never, never, never as "Arthur Thickpacket, remember, is the sort of man who, although a literary critic, is still spiritually sitting on top of an elephant shouting at cooties."

Delegates instructed the FENC to conduct a complete survey of the position of students' unions within further education covering fees, bursary and their activities in the past year. They added that the FENC should set up a commission of general involvement of further education colleges in the NUS.

A debate on the education cuts led to delegates backing a statement calling for education to be seen as a right and not a privilege. It added: "The principle of up in the Robbins report has been thrown over the wall by the Government's education cuts as part of the 'great all fight to reverse Government economic policy' and underlined by opposition to further education cuts providing an increasing number of 'inferior' training courses."

Members voted overwhelmingly for Hanson between the FENC and trade unions opposed to education cuts. They also agreed to instruct the committee to approach and liaise with other sectors within the NUS and to highlight critical areas in further education, including the problem of disciplinary awards.

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Wash words

English dialects shed words as a tree does leaves and in Lincolnshire, Mr G. Edward Campion has been sweeping up the downfall. His recently published little book, *Lincolnshire Dialects* (£2.25 hardback, £1.20 paperback) collects and examines words which either live or soon will pass out of common usage between the Humber and the Wash.

A regular contributor to the speech and long archives of the English Cultural Tradition and Language and the Dictionary, he has recorded some marvelous words which it will be sad to lose: belly tinker (food), to pawter (to laugh loudly), a beezum (an old hag), to catch gawp seed (to stand in open-mouthed amazement) and potnoddies (nipples). But while "outlandish" has been saved by passing into standard English, the more imaginative "blind man's holiday" (twilight) and "Jerusalem nightingale" (dankly) have not.

Philosophically, Mr Campion says "It is not desirable that you should preserve them artificially for normal use." A language must follow its own course, he argues.

He is right, but he has been peppering his conversational liberality with "give it some welly" (accelerate) and "middle-welly" (an instruction to a horse to turn gently left) but it is not caught on among my acquaintance.

It is high time we were all speculating on who will succeed Lord Butler as Master of Trinity College, Cambridge. Although he does not retire until June, 1978, a successor is almost certain to be announced in the latter half of this year. With gusto the Cambridge Evening News's wags have chosen to talk about "pith jobs" and "whispered names".

This newspaper seems to have built up an indelible picture of a most unattractive man: he must be a Cambridge scientist, since Lord Butler is not arts type and the mastership has established some kind of an arts-science alternation. "Whispered names" so far have included the Cambridge Astronomer Royal, Sir Martin Ryle and Sir Alan Huxford, former Royal Society President.

Industrial enterprises do not become democratic by converting them into political playgrounds with government and control. It leads to regular elections of management and its continuous quasi-parliamentary control within the enterprise; industry simply becomes democratic in this manner until in the end the jobs of the democratic participants are endangered.

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Jubileavesdropping

Ten students from Sussex University are to be paid for eavesdropping during this year's Jubileavesdropping. They will mingle with crowds of partygoers at the Jubileavesdropping and for eavesdropping conversations which will be collected to form a comprehensive picture of the nation's attitude to royalty and how it changes during the junketings.

The results will form part of a book of royalty to be written by Philip Ziegler, a writer working in conjunction with the Archivist, the Moss Observation at Sussex. It will complete similar collected conversations which will be collected to form a comprehensive picture of the nation's attitude to royalty and how it changes during the junketings.

The archive's secretary, Dorothy Whitwright, explained: "We want highly sociable volunteers from all walks of life who come into contact with a lot of people. They will use prepared questionnaires and also record their own observations. Our findings will be checked against a national poll we are planning."

Mr Ziegler, who works for Collins, published an earlier mass observation book, *Living Through the Blitz*, compiled under similar lines by the archivist's founder, the late Tom Harrison.

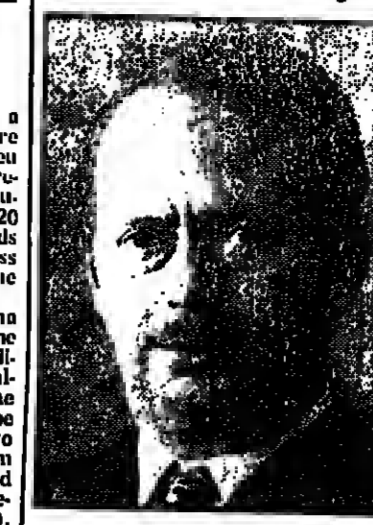
It is so well to speak clearly when addressing Mr. Albert Einstein, professor of physics at London University. At a recent conference in Oxford on how to preserve English as the principal international language, he remarked: "We have not met professors of English who knew the grammar, but are totally unable to speak it."

He seemed to understand the other delegates, however, including Professor Randolph Quirk, also of London University, who said that Latin would not have been of much use had not taken war Greek and "relaxed itself".

War x 2 = beer?

After a half pint of bitter or so, I slipped off home to watch *The Secret War* on BBC 1 in which Dr R. V. Jones on the radio was talking of the philosophy of Albert Einstein, the tolling of his wartime intelligence activities.

Action and debate in a democracy



Ralf Dahrendorf

It is easy to see that the report by the Bullock committee will give new momentum to the debate about industrial democracy, and that as it should be. Whatever disenchanted may have avocoma some of those who traditionally pressed for an extension of moderating of civil rights and equal citizenship, the fact remains that democracy is more than a constitutional arrangement in the narrow realm of politics. An enlightened democracy cannot function except in a society which is dominated by democratic values throughout.

One may not like the term "democratization"—I dislike the word, although I approve of the idea—but unless democracy is firmly anchored in all social institutions, it is not likely to function in the political community either.

For this reason, industrial democracy is a subject high on the agenda of my political platform. And whether as part of a general or own right, democracy in additional institutions is an important subject of debate and of action as well.

However, important as an agenda for democratization is, it is not simple. I am not saying this in order to delay action; most of the action needed can be implemented within a fairly short period of time. But it is important that one knows what such action is about. And here the most important comment is an apparently negative one which nevertheless provides a general starting point for further reflection: democratization is not the simple, indeed naive translation of the procedures of political democracy to other institutions.

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There are many ways of defining what democracy is about, and few which make sense in a strict sense. I would therefore make no great theoretical claims for singling out three statements: Democracy is the power to make decisions about the personal council of elected representatives of staff groups, charged with discussing conditions of employment) which all organizations in Germany have under law.

become ossified, which do not perpetuate error, which do not make, and which are therefore capable of change all the time. Strong institutions are bound to become iron cages of bondage.

But authoritarian government is not the only threat to the capacity of an institution to change. Participation, far from encouraging flexibility and openness, may in fact stifle change. There is no more conservative form of government than government by referendum (as the Swiss realized a long time ago, and who knows what the motives of those are who carry them today).

What matters in a democratic institution is the right balance of initiative and control. There is to be identifiable responsibility for action, and an encouragement to take action, but such action has to be subject to effective control. It is not the remedy for responsibility in the name of democracy which has happened, and they are too totally incapable of implementing any kind of relevant change.

Indeed the permanent participation of all in everything has led to the permanent frustration of all. The danger is not the tyranny of the majority, but the other nineteenth-century phantom, the danger is stagnation. It is therefore important to keep a system of personalization, though accountability responsibility.

Clearly, the point about accountability needs emphasis. Democracy is a power, indeed relevant control, that is controlled by those who are affected by decisions. This seemingly vague point has a number of implications of the greatest importance.

For example: The exercise of power must be visible in order to be controllable; open government, government by explanation, is a democratic condition *sine qua non*. Then, there must be an exercise of power which is visible to those who take decisions affecting them; in this sense enforcement is a part of democracy.

Such control may be effective, but it is neither relevant nor responsible. To the extent to which this is feasible, democratization should, I believe, be intra-organizational rather than extraneous.

The third point about the assertion of the interest of all is actually important consequences. What it means is in effect that everybody in a university should have a say in some respects, there is no case for a unilateral system of representation. Members of the administrative and technical staff may have views about the teaching of economics and methods of appointing lecturers, and it would be bad government not to listen to such views, but there is no way in which an interest in their part could be construed which would justify their participation in the relevant process.

A similar case can be made for students. However, it can be made for members of the academic staff also. I find it difficult to see why professors, as such should be qualified to decide conditions of employment of administrative and technical staff, and I have often missed the personal council of elected representatives of staff groups, charged with discussing conditions of employment) which all organizations in Germany have under law.

In practice, principles are not the only guide to action. Undoubtedly, the vice-chancellors will reach their own conclusions on industrial democracy, universities in due course. But it is irrelevant to remember in this process that while democratization is necessary, it must mean the creation of flexibility, of initiative and control, rather than ossification by pseudo-participation. It must involve open and accountable government; open to all groups; and it must recognize the differences and varieties of interests in academic institutions. Academic democracy is of necessity a complex set of arrangements.

Almost 60 per cent polytechnic staff do research

The resources to undertake research are essential in any institution involved in higher education. A research team from the Polytechnic of North London has indicated in a new book, *People in Polytechnics*. The book reports on a national survey of staff and students undertaken by the team in 1972-73 which revealed that nearly 60 per cent of the polytechnic academics interviewed were involved in some aspect of research.

The scope of the survey, conducted by Caroline Cox, Maurice Mealing and Julia Whitburn, was wide, incorporating basic demographic profiles and the views of people in the polytechnics at the time. The book examines the background of staff and students, student housing, the development of the Council of National Academic Awards and its effect on polytechnics, and the role of research.

Fifty-nine per cent of staff interviewed were doing some research. Overall 63 per cent of degree staff and 53 per cent of non-degree staff were involved in research, with considerable variation between polytechnics was considerable. Significant differences also arose when research involvement was analysed by length of service and age. Sixty-four per cent of staff who had been in their polytechnics for 10 years or less were working on research, falling to 48 per cent among staff in post for more than 10 years.

The book examines the amount of time spent on research by various grades of staff. The survey showed that when promoted to senior lecturer level they have more time for research because teaching loads are lighter. This gain is eroded by administrative responsibilities as principal lecturer and head of department level.

A greater proportion involved in research in 1972-73 had better academic qualifications than those not doing research. Many had an educational background which more closely resembled that of their counterparts in the university sector, says Sarah Robinson, a research assistant at the Polytechnic of North London, in the section on the role of research.

The career situation for research staff in polytechnics is very unsatisfactory, however. "While readers are generally appointed on a permanent basis, most research fellows and assistants are on short-term contracts and it has been difficult to build up an ongoing source of expertise."

At the time of the survey there was substantial evidence of the development of all kinds of research activities in the polytechnics. But the survey highlighted some of the difficulties encountered by polytechnic staff and students in terms of both the organization and the financing of research.

"It can be said that the opportunity and the resources to undertake research must be an essential aspect of the work of any institution in higher education, and staff at the Open University have recently emphasized their need to have adequate research resources. The dilemma for the polytechnics has been in developing and maintaining high academic standards at the same time as operating within the constraints of the publicly controlled further education system."

Giving a general profile of students in 1972-73 the book says that, overall, 64 per

People in Polytechnics

by Julia Whitburn, Maurice Mealing, Caroline Cox



cent of degree students and 65 per cent of other full-time students were from "middle class" backgrounds. However, it points out that in 12 polytechnics this figure fell to 60 per cent or lower.

Eighty-two per cent of all degree students in the sample had a two A-level qualification but the proportion fell to 28 per cent among those on part-time non-degree courses. An analysis of faculty vacancies revealed that students in the science, engineering and technology faculties were noticeably less well qualified in terms of A-levels than their counterparts on social science, arts and professional training courses.

The book says that as a group polytechnic students on degree courses in 1972-73 were not as well qualified on their university counterparts as the A-level "scoring" system is used as the significant indicator.

Newspaper advertisements were responsible for the recruitment of only 7 per cent of polytechnic students. Far more significant was the advice from school or college careers advisers, about 38 per cent, and employers,

a similar number. Fifty per cent of the degree students maintained they had chosen their course and polytechnic as a "second best" substitute for a university place. But 21 per cent of full-time students generally said that their polytechnic was the best place for their particular course, while 25 per cent of part-time students said their polytechnic was the only place available which offered the course of their choice.

The research team responded to the fact that half the students on degree courses indicated that they would have preferred a university place by investigating this area in depth. They found that 57 per cent of full-time degree students in the sample had applied for a university course. The percentage in this category rose to 83 in one polytechnic in the southwest and to 81 or another in the Midlands.

"This surely raises the whole question of the role which polytechnics are to play in the field of higher education," says the book. "On the one hand it could be said that they fulfil an important function in offering a second chance to failed university applicants,

on the other hand it could be argued that the polytechnics should be more eager to offer places on their degree courses to those students without conventional qualifications."

Commenting further on this the team says that greater flexibility of entry requirements might be considered for degree courses, or via a Diploma of Higher Education route. "We would tentatively suggest some further thought might be given to the adoption of a less stringent policy for admissions to DipHE courses. Many students who then be able to find their way into higher education, and their own level of ability without having to surmount the A-level barrier."

The survey showed that 74 per cent of polytechnic staff had a first degree, compared with 94 per cent in the university sector. A greater proportion of the teaching staff in polytechnics graduated from civic universities—41 per cent compared with 27 per cent in the university sector. It revealed that while Oxbridge was more strongly represented in the university sector, the three per cent of Oxbridge graduates among the staff, a similar number to the 10 per cent found in the polytechnics.

Forty-one per cent of polytechnic staff had a first or upper second class honours degree, thirty-one per cent had gained a master's degree and 16 per cent a doctorate.

But the book points out: "The information on staff provided by the survey indicates that there is little room for complacency. Since their formal designation is middle class, centres of higher education the polytechnic staff with good academic qualifications, by their very nature, are more likely to be in a staff assessing a number of aspects of the teaching situation and college facilities."

In the years since 1964 the CNAA had become an essential part of polytechnic life without it would be "unimaginable" for polytechnics to exist. "Many of the courses in polytechnics are strikingly innovative both in subject matter and structure when contrasted with traditional university courses and the CNAA has been astute in attempting to ensure that academic standards have not been sacrificed in the cause of innovation."

"We have seen throughout the survey an increased satisfaction of both staff and students with the newer CNAA-approved courses and this must be regarded as a major achievement."

To survive, says the book, the polytechnic now have to demonstrate that the education they provide fits the requirements of a society needing to compress its role in the face of advanced technological change. Without a major financial cutback the polytechnic staff will be unable to prepare the technical and skilled manpower needed in the future. "People in Polytechnics, a survey of polytechnic staff and students, 1972-73, by Julia Whitburn, Maurice Mealing, Caroline Cox, published by the Society for Research into Higher Education, the University of Surrey, Guildford. Price £4 (SRIE members £3).

Clive Cookson, science correspondent, reports on new proposals for health resources

Is RAWP a four letter word or a fair future for medicine?

An ugly new word is being mumbled around the lecture theatres and wards of London's medical schools and teaching hospitals—RAWP. Like some other four letter words it is used as a noun, a verb and as a swear word; its meaning is as unpleasant as its sounds.

Up in the crumbling hospital of North West London, however, RAWP has a very different meaning. There it is a word full of promise, stirring visions of a brighter, fairer future.

It stands for the Resource Allocation Working Party of the Department of Health and Social Security. At the end of September the DISS published the working party's report, *Sharing Resources for Health in England*, whose recommendations were warmly welcomed by the Secretary of State for Social Services, Mr David Ennals. It is these proposals that have become known throughout British medicine as RAWP.

Mr Ennals described RAWP as a method of putting an end to "unjustifiable inequalities" in the way medical resources have been distributed. Parts of the country which have had an investment in health care for people at equal risk. In other words, resources will be distributed entirely according to need rather than to the defined demand, as at present—demand which, RAWP accepts, can never be satisfied and is a misleading indicator of need because "supply of health care actually fuels further demand".

The proposals involve setting annual targets for revenue allocation at regional, area and district levels. These are obtained from population figures weighted to take account of age, sex, mortality (as an indicator of morbidity), fertility and marital status, and adjusted to allow for patients who cross administrative boundaries and for cost differences. Actual allocations would bring each region, area and district as close as possible to its target "subject to safeguards against excessively rapid change".

Revenue allocations will be topped up by a Service Increment for Teaching (SIFT) to cover the additional costs of services to patients in teaching hospitals, but not the extra costs involved in being centres of excellence (no contribution towards teaching or research costs is to be made because these are assumed to be met entirely from education funds).

SIFT will be based on the student numbers in 1981 (excluding research students) and will cover 75 per cent of the average excess cost of teaching compared to non-teaching hospitals. For the four Thames regions it will be increased to allow for London teaching and the effects of lower University Grants Committee funding of London Medical schools, but London teaching hospitals will still be left with residual excess costs of £11.6m not covered by SIFT. On the other hand SIFT will more than make up for the excess costs of some provincial teaching hospitals—in Newcastle by more than 10m.

The regions that stand to gain most from RAWP are the North West and Trent (both more than 10 per cent below their revenue targets) followed by West Midlands, Yorkshire, Wessex and the North. The biggest losers are the four Thames authorities, which cover London and the Home Counties (North West and North East Thames are about 15 per cent above target).

Capital allocations will eventually be based on population weighted as for revenue, but in the short term there will be additional restrictions on investment in regions with more than their fair share of existing capital stock: NE, NW and SW Thames, East Anglia, Oxford and Mersey.

A large majority of the medical profession, even in London, accept in principle that Britain's health resources are unequally distributed, and in particular that the capital has more than its fair share of the best facilities. But many feel that RAWP would be a disastrous way to put the imbalance right.

Of course RAWP faces its most intense hostility in the London medical schools, where it has acted as a focus for more general fears for the future that have been growing for the past two or three years. This worry extends from the desks and professors down to new students. Mr Douglas Benger, dean of Middlesex Hospital Medical School, says intake is being affected because applicants are worried by rumours that one or two of London's medical schools are going to be forced to close down or move to the provinces. From the relative detachment of the south coast, Professor Donald Acheson, dean of Southampton University Medical School, sees morals at all 12 London schools being damaged by perceptions of "planning blight", intensified by RAWP.

There are almost as many different objections to RAWP as doctors in London. Some of the points made most often include:

● RAWP will effectively shift resources away from education and training to general medical services, severely jeopardizing the long-term

future of British medicine. As Mr George Banton, of University College Hospital, spokesman for the chairman of the London teaching hospitals, put it: "Present circumstances have combined to produce a situation in which the public, the politicians and a majority of the medical profession (those working in the teaching hospitals) see short-term national advantage in a policy which must result in a very serious contraction in the quality of medical care available in the teaching centres of the United Kingdom and lead to a disastrous shortage of doctors of all kinds."

● Resource reallocations must wait for a detailed assessment of the country's long-term health needs. If the mathematical formulae of RAWP are applied and economic forces are then allowed to do their work, said Mr Ranger, the results are bound to be damaging.

● Even within its limitations, RAWP is inequitable and ill-informed. Mr Banton said: "The proposals are so theoretically contrived, and based on dubious statistics and indicators of need, that rather than relieving hardship and distress they will make them worse."

● SIFT should recognize that, as regional and national centres of medical excellence, teaching hospitals incur extra costs that go well beyond their teaching role.

● The timing is wrong. It is relatively easy to redistribute a growing cake, since those who lose out in the process will not have to suffer an actual reduction in the size of their slices; but to implement RAWP in the late 1970s when little growth in national wealth is expected, will disrupt London hospitals so seriously that they will find it hard to recover it and when economic expansion returns in the 1980s.

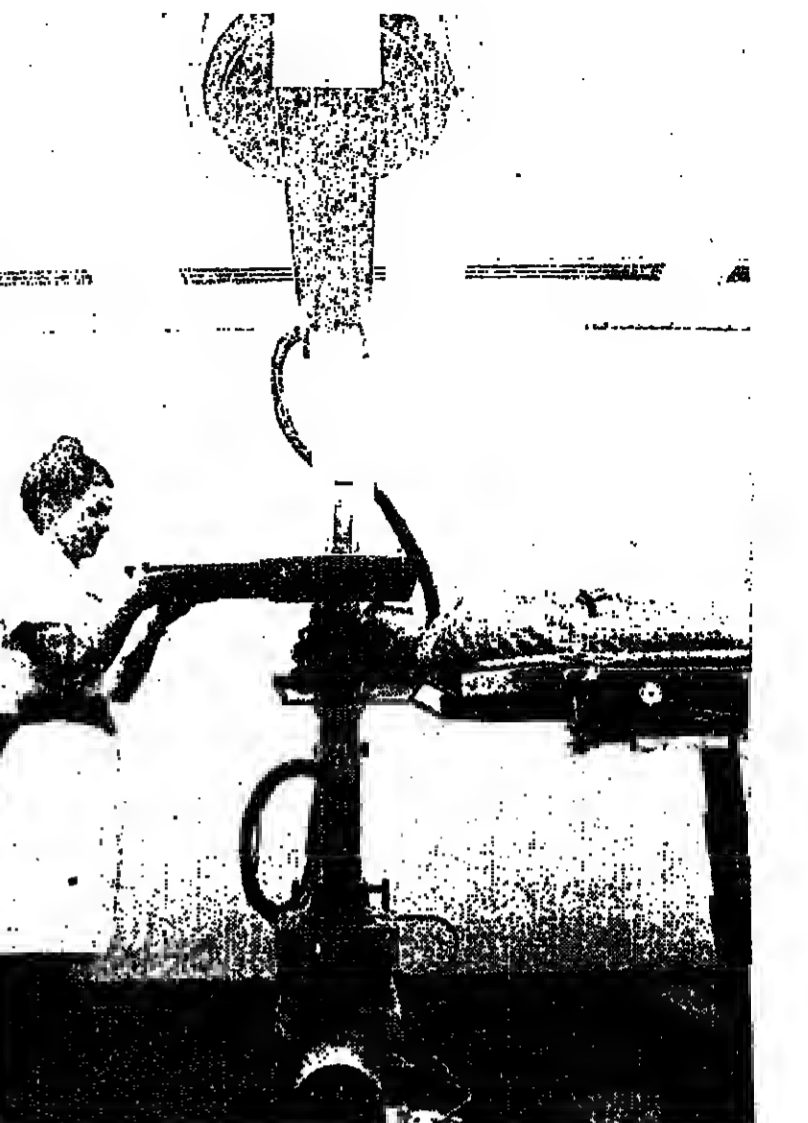
● The good intentions of RAWP will be thwarted by the complex bureaucratic structure of the health service, with its three tiers of regions, areas and districts. The distribution mechanism works primarily at regional level, and although the same principles are meant to operate within regions, the increasing local politicization of the health service is likely to distort the pattern. In particular, local political pressures may prevent provincial teaching hospitals seeing much of the money taken from their London counterparts.

● RAWP is a red herring. Effort should be concentrated on increasing resources available to the health service as a whole, for example by improving efficiency, reducing bureaucracy and finding new sources of revenue (perhaps by extracting some financial contribution from patients who can afford it).

His main worry is that the "hands thrown up in horror" in the privileged regions may persuade the Government quietly "to drop RAWP", especially as the London medical schools "have the ear of an area much closer than us to the chaps who run the DISS".

Dr Beswick calls the North-West a "grotesquely underprivileged region" with £75m less than its fair share of hospital buildings. "Thanks to the UGC we have one of the most modern medical schools in the world, yet our teaching hospitals are either dilapidated or population-hating down." He says that RAWP will not be concentrated on the teaching hospitals of Manchester, and are likely to be spread over many inadequate general hospitals in the North West. However even this would help his students, who spend considerable periods gaining experience in non-teaching hospitals throughout the region, because Manchester's designated teaching hospitals have neither the resources nor the staff to cope with the influx of students from 100 graduates a year in 1987 to a projected 275 in 1979.

Dr Beswick stresses that reallocation of financial resources will not be enough by itself. "You have to transfer the teaching post with the money—and this something we will fight for to the bitter end." He is impatient with those who say RAWP should be postponed until some golden day in the 1980s when money is "guaranteed" to be available. "Experience shows that if recommendations of



An orbital skull table at Guy's Hospital, London. It is one of only five such units in Britain.

London's medical students, through the University of London Union Medical Group, have expressed great concern about RAWP. The proposals constitute a leveling down of services, says generalist statistics to quantify regional needs with no serious attempt to take into account the real health needs of urban communities, and assume that the present technical and mechanistic approach to the delivery of health care is the correct one."

RAWP has caused considerable disquiet outside the capital too. For example, Professor Acheson in Southampton is very worried about its practical effects, although his region, Wessex, stands to gain. But there are enthusiastic RAWPists in provincial medical schools and Dr F. B. Beswick, executive dean of Manchester University Medical School, is one of them.

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this kind are delayed they get worked down so much that nothing happens in the end."

However, there is enough common ground between Manchester and London for the University Hospitals Association, which represents teaching hospitals throughout Britain, to be preparing a publicity campaign to draw attention to the threat that present policies pose to medical education as a whole. Much of the impetus behind this comes from the London medical schools, which are anxious not to appear to be acting alone for their own selfish reasons, but they can draw on a lot of sympathy and understanding from the provinces.

There is concern too from hospital doctors not directly involved in teaching. As Mr Tony Grobham, the Keatinger surgeon who is chairman of the Central Committee for Hospital Medical Services, said: "All consultants are anxious that the teaching institutions on which the future of medicine depends should not be deprived of resources."

But Mr Grabham's suggestion that some of the "more esoteric research done in teaching hospitals should be sacrificed for the sake of the teaching is firmly rejected in the medical schools.

Few opponents of RAWP have a ready answer when asked how else a fair allocation of resources might be achieved. The normal response is that the whole structure of British medicine must be investigated far more thoroughly before any reallocation scheme is proposed. Professor Norman Morris, deputy vice-chancellor of London University and professor of obstetrics at Charing Cross Hospital Medical School, feels that medical education particularly needs to be looked into. The loud and influential protests that greeted RAWP raised hopes (and fears) that Mr Ennals might be deflected from his path. But the Secretary of State announced just before Christmas that he was going ahead, if slowly.

The four Thames regions will be given a tiny increase to revenue for 1977/78, one-third or one-quarter of one per cent, but Mr Ennals stressed that this really represents an absolute cut in a region's ability to meet the growing demand that arises from demographic change; in some places actual reductions in current services are likely to be unavoidable. The more deprived regions will be allowed real growth of about 3 per cent.

Ten universities clean up to the tune of around £1m a year



Changes in method have brought savings...

Cleaning costs may not be a major item of a university's budget but nearly £1m a year is jointly being claimed by ten universities who have decided to change to cheaper methods of cleaning than in 1969-70. It is one of the more tangible results of the work of the North Eastern Universities Organization and Methods (O and M) Unit, a body which studies and advises on university management and administration and encourages the best possible management practice.

The unit, which is based at York University with a staff of five, has Bradford, Durham, Hull, Leeds, Newcastle, Sheffield, York, Leicester, Loughborough and Nottingham. There are similar regional units for the other universities.

Each pays £2,500 a year for the unit's services, a contribution which in 1975-76 represented about 0.045 per cent of the combined total expenditure of the 10.

Although the O and M unit says its first priority is the more effective working of university administration, it is becoming more and more concerned with seeking ways of making economies in particular areas. At one university, for instance, a study into the upkeep of buildings and grounds led to savings of £20,000 a year and one on photographic services led to suggested ways of saving £10,000.

It is not possible to attribute these savings directly to the unit's work, according to the unit's management committee, for July 1976. The unit can only recommend methods which the universi-

ties then implement as they wish. But it adds: "what can be claimed beyond question is that together, the member universities and their unit have achieved very considerable savings, far in excess of the cost of the unit."

Part of the savings on cleaning unit's purchasing group, a voluntary association of the North Eastern universities seeking to make the best use of their combined purchasing power.

Cost comparisons have shown that some universities were paying different prices for the same item from the same supplier, and so by renegotiating prices.

The cost of floor polish, which represents some £5,000 for the central cleaning of the universities in the group, has been renegotiated by the group's coordinating committee at a price between 25 and 45 per cent less than previously paid, and over lavatory paper, paper towels, soap and disinfectants.

The exchange of information between the universities has brought their own benefits, according to coordinating committee's first annual report. Members discovered that there was a Department of Environmental Studies at one university, that one university had a binocular bed linen, that one university had a top university were provided with bed linen and that a specialized laundry service had been installed at another.

Agreement has now been reached

on ontology. The group has negotiated a price for copying paper which should bring a total saving of about £6,000 a year. The potential value of HMSO as a supplier has been investigated, the report says, but it has no longer been found to be the cheapest source of supply.

It has also discovered, "with a quiet", that some Ministry of Defence contracts, through which the DoE obtains many of its supplies, are not available to universities, something it is to investigate further.

In the 10 years since it was set up the O and M unit has studied a range of topics including office practices, clerical and secretarial staff, administration in academic and central departments and student unions.

There have been studies of how a registrar used his time, of the pattern of his contacts with members of his staff and other members of the university, and with people from outside.

The unit now envisages its work extending in various ways: expanding its training role by organizing seminars and meetings on topics of mutual interest; for universities, the current legislative proposals; liaisons with administrations in other universities, particularly in America and Europe; and publicizing its publicity service, not only abroad but to other higher education institutions in Britain.

Frances Gibb

Revenue allocations will be topped up by a Service Increment for Teaching (SIFT) to cover the additional costs of services to patients in teaching hospitals, but not the extra costs involved in being centres of excellence (no contribution towards teaching or research costs is to be made because these are assumed to be met entirely from education funds).

There are almost as many different objections to RAWP as doctors in London. Some of the points made most often include:

● RAWP will effectively shift resources away from education and training to general medical services, severely jeopardizing the long-term

future of British medicine. As Mr George Banton, of University College Hospital, spokesman for the chairman of the London teaching hospitals, put it: "Present circumstances have combined to produce a situation in which the public, the politicians and a majority of the medical profession (those working in the teaching hospitals) see short-term national advantage in a policy which must result in a very serious contraction in the quality of medical care available in the teaching centres of the United Kingdom and lead to a disastrous shortage of doctors of all kinds."

● Resource reallocations must wait for a detailed assessment of the country's long-term health needs. If the mathematical formulae of RAWP are applied and economic forces are then allowed to do their work, said Mr Ranger, the results are bound to be damaging.

● Even within its limitations, RAWP is inequitable and ill-informed. Mr Banton said: "The proposals are so theoretically contrived, and based on dubious statistics and indicators of need, that rather than relieving hardship and distress they will make them worse."

● SIFT should recognize that, as regional and national centres of medical excellence, teaching hospitals incur extra costs that go well beyond their teaching role.

The timing is wrong. It is relatively easy to redistribute a growing cake, since those who lose out in the process will not have to suffer an actual reduction in the size of their slices; but to implement RAWP in the late 1970s when little growth in national wealth is expected, will disrupt London hospitals so seriously that they will find it hard to recover it and when economic expansion returns in the 1980s.

The good intentions of RAWP will be thwarted by the complex bureaucratic structure of the health service, with its three tiers of regions, areas and districts. The distribution mechanism works primarily at regional level, and although the same principles are meant to operate within regions, the increasing local politicization of the health service is likely to distort the pattern. In particular, local political pressures may prevent provincial teaching hospitals seeing much of the money taken from their London counterparts.

RAWP is a red herring. Effort should be concentrated on increasing resources available to the health service as a whole, for example by improving efficiency, reducing bureaucracy and finding new sources of revenue (perhaps by extracting some financial contribution from patients who can afford it).

His main worry is that the "hands thrown up in horror" in the privileged regions may persuade the Government quietly "to drop RAWP", especially as the London medical schools "have the ear of an area much closer than us to the chaps who run the DISS".

Dr Beswick calls the North-West a "grotesquely underprivileged region" with £75m less than its fair share of hospital buildings. "Thanks to the UGC we have one of the most modern medical schools in the world, yet our teaching hospitals are either dilapidated or population-hating down."

He says that RAWP will not be concentrated on the teaching hospitals of Manchester, and are likely to be spread over many inadequate general hospitals in the North West. However even this would help his students, who spend considerable periods gaining experience in non-teaching hospitals throughout the region, because Manchester's designated teaching hospitals have neither the resources nor the staff to cope with the influx of students from 100 graduates a year in 1987 to a projected 275 in 1979.

Dr Beswick stresses that reallocation of financial resources will not be enough by itself. "You have to transfer the teaching post with the money—and this something we will fight for to the bitter end." He is impatient with those who say RAWP should be postponed until some golden day in the 1980s when money is "guaranteed" to be available. "Experience shows that if recommendations of

this kind are delayed they get worked down so much that nothing happens in the end."

However, there is enough common ground between Manchester and London for the University Hospitals Association, which represents teaching hospitals throughout Britain, to be preparing a publicity campaign to draw attention to the threat that present policies pose to medical education as a whole. Much of the impetus behind this comes from the London medical schools, which are anxious not to appear to be acting alone for their own selfish reasons, but they can draw on a lot of sympathy and understanding from the provinces.

There is concern too from hospital doctors not directly involved in teaching. As Mr Tony Grobham, the Keatinger surgeon who is chairman of the Central Committee for Hospital Medical Services, said: "All consultants are anxious that the teaching institutions on which the future of medicine depends should not be deprived of resources."

But Mr Grabham's suggestion that some of the "more esoteric research done in teaching hospitals should be sacrificed for the sake of the teaching is firmly rejected in the medical schools.

Few opponents of RAWP have a ready answer when asked how else a fair allocation of resources might be achieved. The normal response is that the whole structure of British medicine must be investigated far more thoroughly before any reallocation scheme is proposed. Professor Norman Morris, deputy vice-chancellor of London University and professor of obstetrics at Charing Cross Hospital Medical School, feels that medical education particularly needs to be looked into. The loud and influential protests that greeted RAWP raised hopes (and fears) that Mr Ennals might be deflected from his path. But the Secretary of State announced just before Christmas that he was going ahead, if slowly.

The four Thames regions will be given a tiny increase to revenue for 1977/78, one-third or one-quarter of one per cent, but Mr Ennals stressed that this really represents an absolute cut in a region's ability to meet the growing demand that arises from demographic change; in some places actual reductions in current services are likely to be unavoidable. The more deprived regions will be allowed real growth of about 3 per cent.

An emphasis on the practical in the land of idealism

There is a tendency to think that the institutions of industrialized countries are becoming more alike with the passage of time; in the case of education they all have compulsory schooling, high literacy rates, selection and specialization, and a well-developed university sector. But the formal similarity may be misleading.

An example of this is provided by comparing answers to the questions "what are the most popular subjects?" (in terms of enrolments as a proportion of the total student population) and "what do good students study?" in British and German universities.

The quality question can be approached through the Statistical Bulletin of the Universities Central Council on Admissions which includes details showing the numbers of students with very good A-level scores admitted to university to read different subjects. The university subjects which they attract are listed in the bottom part of the scale—more or less—psychology, sociology, economics, business studies, and all the main engineering subjects, except for chemical engineering.

The same type of material is unfortunately not available for Germany; the German equivalent of UCCA was only set up in 1973, and it only keeps records for limited entry (matriculation) subjects. A German based multi-national firm, however, has kept examination records for all its graduate applicants in the degree subjects: engineering, economics, and business economics. These records show that the chemistry graduates have a better performance than the other four sets of graduates, whereas law is top out of these five in Britain.

Perhaps more striking is that for the Germans the mechanical engineers, economists and business economists, are just as good as the lawyers.

The comparison between Britain and Germany of the proportions of students reading the various subjects is also revealing. Our strengths again are the humanities and the natural sciences. About 13 per cent of all our students were reading English, French, and German in 1974 compared with 5 per cent in Germany. Over 41 per cent read natural science in Britain as against 25 per cent in Germany. Germany is stronger on engineering subjects; the difference is not great (25 per cent compared with

20 per cent) but German engineers form a larger proportion of its "qualified engineers and scientists" group—the engineers represent half of this group in Germany, and one-third of it in Britain.

The Germans are also strong on law—20 per cent as opposed to 8 per cent in Britain. But with regard to the latter figures it is important to keep in mind that law studies in Germany do not just lead to private practice, but also to general administration posts in the civil service, and to industrial management.

Thus the German law emphasis is more widely and less traditionally vocational than in Britain. And probably the biggest single difference is in the proportions reading economics and business studies; 7 per cent for Britain, and over 21 per cent for Germany.

The general picture that emerges is a British preference for the theoretical and academic, and a lack of enthusiasm for the technical and commercial subjects. The pattern is reversed in Germany.

The British figures even provide a study in miniature of the phenomenon. Classics leads the humanities in its share of good A-level performers; mathematics leads the natural sciences; geography usually gets more good students than economics.

The internal contrast should be enough to make us think about priorities. And the German contrast might cause us to query the British rationale: that the universities exist to educate, not to produce job incumbents.

Do we, after all, have any good reason to suppose that a German economist is less "educated" than a German geographer, or that the superior physicist is culturally superior to the German civil engineer?

Hermann Bayer teaches at the University of Minsk, and Peter Lawrence is a senior research fellow at Southampton University.

When polyferation takes place is the end product polywollydoodle?

This polyglossary has been assembled from various contributions to the Brighton Polytechnic News Bulletin. Each world is intended to fulfil a specific linguistic need and has at least some etymological respectability.

Polyaste—create a polytechnic

Polyferate—enlarge a polytechnic

Polyphenus—monstrous, one-eyed, many-sided polytechnic

Polycracy—system of polytechnic government by committees. (Alternative spellings—"polycrasy" "polycracy")

Polytic—nervous affliction caused by polycracy

Polywollydoodle—1. Graphic result of polycracy; 2. Exhibit at the faculty of art and design

Polystrata—method used in the bureau's department

Polytation—regulation designed to be ignored

Polytate—regulation designed not to be ignored

Polyphobic—morbid fear of the polytechnic prevalent at the college of education before the merger

Polyflage—CNAA quinquennial report

Polycon—Polytechnic prospectus

Polyplex—Polytechnic onyx (not to be confused with "polyplex" "purror's laxativo")

Polytuff—minor publicity item beneficial to the polytechnic

Polytany—clandestine behaviour not usually beneficial to the polytechnic

Polygates—members of the academic board

Polytari—non-members of the academic board

Polytatics—any new but dubious area of study

Polywobles—revisions of the polytechnic constructed with high alumina concrete

Polyglot—1. Refectory gravy; 2. Member of the department of European studies capable of describing refectory gravy in different languages.

Polyrump—Polytechnic works, alterations and improvements

Polyput—hold up development putting one's foot in the way

Polyfilla—desperate last minute effort to boost student numbers

Polystripa—Regional student council

Polymers—full-time female members of staff (alternative spelling—"polym/s")

Polyplexus—soft underbelly of a polytechnic

Polyphonic—formal new structure from disparate elements

Polythos—characteristic spirit of a polytechnic

Polynesia—condition caused by its eating at the polytechnic

Polyfloss—trendy courses with the purpose and less potential

Polytossy—substitute for a polytechnic philosophy

Polyplunge—unacknowledged adoption of courses running at other polytechnics

Polyphobic—state of unbridled multiplicity within the polytechnic

Polygogue—self-important member of the polytechnic

Polygothic—code of acceptable behaviour within the polytechnic

Polyphonic—aimless drift against the walling pressure of a polytechnic director

Polyglide—motion supported by hot air

Polydox—polytechnic health service

Polygendite—polytechnic counselling services

Polytistics—incorrect data used as a basis for forward planning

Polygrope—induction course

Polygram—any double wing door at the polytechnic. The half that any normal person would close as an entrance is invariably half designated as an exit. (Ad vice versa)

Polyruffit—scratched notice (it misleads an examination room—Calculators out while rules OK)

Colin Mars

Terry Smith discusses some problems experienced by the mature graduate job-hunter

What about the older graduate workers?

In addition there are around 50,000 working part-time as undergraduates with the Open University, and all of these are "mature".

What evidence there is suggests that the numbers of full-time students will go on rising; research carried out by the Open University showed a clear upward trend in its mature student body and I suspect that a number of perished similar growth.

In addition to recent TUC documents the Universities Education even more older students. Clearly, mature students still form a minority in the general student body but they are a significant minority and have special problems and needs which are, in the main, being neglected.

Some of the major problems faced by the older graduates arise when he or she leaves the university and attempts to obtain work.

As a university careers adviser, I meet a number of mature students every year who come to discuss their career aspirations. Many have entered higher education as a route to a career in teaching, and until the recent cutbacks in teachers, most have been welcomed with open arms.

I can think of many successful examples over recent years—a retired police inspector graduating at 52 who now teaches history in a comprehensive, a former "father of the chapel" in the printing industry who now works with the Workers' Education Association, the ex-collary filter who is now teaching social studies in a college of further education, the ex-London cab driver who is a university teacher.

No doubt graduates with this sort of background are doing much to enrich our educational system but, of course, not every mature graduate wishes to become a teacher nor should he. Outside teaching, the position is less encouraging, and obtaining suitable and appropriate

work can be a frustrating experience for the mature student.

Take, for example, the case of a 35-year-old ex-miner who, after five years of full-time study, graduated with an honours degree in geology and industry and the man who works in it, but he was fully rejected by the National Coal Board, because "we do not usually fill subordinate posts from outside the industry".

He has a quite extraordinary emotional attachment to the coal industry, and at the time of graduation was desperately keen to enter the industrial relations field and to be, in some way, a part of it.

Then there was the 31-year-old ex-civil servant who obtained a first class honours in economics and a first in the Civil Service. "We cannot see that anything can be done for her within the professional standards field."

I can quote other similar cases which have caused frustration, anger and, indeed, anger because the job market did not respond to her qualifications.

There are a number of general problems faced by the older graduates. A degree course is rarely a direct training for a particular career, and graduates are often expected to undertake a further full-time course before being able to enter a particular field.

The best example for this is probably teaching, but further study may be either essential or highly desirable for those wishing to enter fields like social work, management or personnel management.

The older graduate has to decide whether he or she can afford another year without a proper income; will family responsibilities be a financial sacrifice to be made? And, of course, long-term financial security may also be necessary. A permanent loss of earnings

would not be part of the selection process, but would attempt to solve the problems the person might find as a mature student and would discuss the relationship between the courses of study and postgraduate employment.

2. Attempts should be made to make the public aware of the situation and especially to emphasize that degrees do not automatically lead to improved careers.

3. There should be concerted efforts to change employer attitudes to older graduates and, in particular, to persuade employers to recruit unnecessary top age limits. It would be sensible if the universities, the TUC and the National Union of Students were to launch a national effort in this direction, but the latter bodies seem to have little interest in the question.

4) Since the Open University is, almost by definition, made up exclusively of mature students, it should be taking a leading role in creating a change in attitude amongst employers. So far the OU seems unprepared to put any adequate sources into its "careers" activities but it has a vital part to play.

5) If all else fails, there might be need for "age discrimination" legislation, similar to that which is already proposed for some states in Australia.

The Standing Conference of Universities' Appointments Services is currently actively involved in trying to improve the employment position of the older student, and it seems likely that this body might act as a useful catalyst in what is clearly a complex field. The same is not to be found by excluded mature students from higher education.

What can be done to prevent some of the frustration and anger which undoubtedly results from this situation? I would make a few suggestions.

1. Universities and polytechnics should provide more effective counselling for mature students before the individual decides to accept the offer of a place. The counselling

the author is director of careers and appointments of Hull University and formerly in personnel management with I.C.I., I.M.I. and Clarks Ltd.

Keeping track of the communication of research

Some of my research papers find a home in science journals; others are published in journals devoted to the humanities. In the latter way I put a paper together differs drastically according to its destination.

Jack Meadows discusses some of the issues to be looked at by the Primary Communications Research Centre at Leicester University

The scientific paper begins with a brief, factual title, immediately followed by a short abstract of the paper's contents. References in other people's work by the body of the text are made by number or perhaps, name, and all the bibliographical details are collected together at the end of the paper.

The paper for the humanities journal may have an allusive title (usually only in the second part of the title can explain the first part). The abstract may well be absent, and the references often appear at the foot of the page. They contain further commentary along with the bibliographical data, and at intervals there appear those mystic words *op. cit.*, *ibid.*, and so on.

Every time I construct a paper, I wonder why do I do it in that particular way. Is it purely a difference in convention, or does it reflect some basic structural difference between disciplines? Are titles more diffuse in the humanities than in science because authors in arts faculties are cavalier with words, whereas scientists are puritanical?

Or is it because the subject matter of a paper in the humanities is less readily defined in a concise way? Does the absence of abstracts from a humanist's journal reflect a lack of zeal on the part of the editors, or the difficulty of abstracting research topics in that area?

These queries are not simply interesting items for debate; they may also suggest practical limitations on the communication of research. For example, some areas of science can be monitored via a KWIC (Key-word-in-context) index. Such an index works on the assumption that words in the titles of papers match with contents sufficiently well to be used in retrieving relevant papers.

If articles in the humanities have more diffuse titles, then a humanities KWIC index may be ruled out automatically. Similarly, if there really are subjects for which adequate abstracts are not possible, this denotes the abstracts journal, which is generally one of the commonest methods of monitoring research information.

Questions relating to the communication of research frequently arise in this way from straightforward observations of the actual practice of communication; but they can lead, on the one hand, to a study of the nature of knowledge, and of its transmission, or, on the other, to suggestions for possible (and practical) improvements in the dissemination of research.

Work under both these headings is usually classified, in the jargon, as primary communications research. (A primary communication is a communication which is not research information as contrasted with a secondary communication—such as a bibliography—that simply tells you such information exists.)

The great expansion of research activities during the present century has led to a corresponding growth in the amount of research information to be disseminated. This so-called "information explosion" is generally discussed in the context of science and technology, but its effects can be seen in all research fields.

During the 1960s, efforts to cope with the increasing flow of information concentrated especially on the improvement of secondary services. The informant was, in effect, coming out anyway, and the problem was how to monitor the flow, and retrieve relevant items.

The financial stringency of recent years has led to a new emphasis on the problems of producing the information for dissemination. If a number of scholarly journals closed down because of lack of finance, it might actually ease the situation of the secondary services, but it would probably be regarded as disastrous for the dissemination of research. It is problems of this latter sort that are now commanding attention.

In view of the growing importance of work in this area, British Library (R & D) has recently provided funds to establish the Primary Communications Research Centre at the University of Leicester. The centre will, we hope, provide a focus in Britain for interest in stu-

papers attract comment from referees, and the extent to which comments by two different referees on the same paper agree. The practical outcome of this investigation could be not only an informed assessment of current refereeing habits in the United Kingdom, but also, we hope, suggestions for increasing the overall efficiency of the process.

The information that research provides may be of interest to a much wider group than just fellow-workers in the same specialism. It may be required for use by technologists and by administrators, as well as by research workers in other specialisms.

People in all these categories apparently acquire some of their research information not from the original investigator's report, but from references in it in the mass media. We have therefore begun a study of one aspect of such transmission: the way in which the media provide information on research and development in science and technology.

Media research is almost guaranteed to be controversial, but our entry point to this field—the question of selection of material—has, perhaps surprisingly, not excited too many arguments. The type of query that arises is obvious. In terms of manpower and numbers of research publications, chemistry is one of the most important branches of science; yet chemistry is reported by the media relatively infrequently. Why is this?

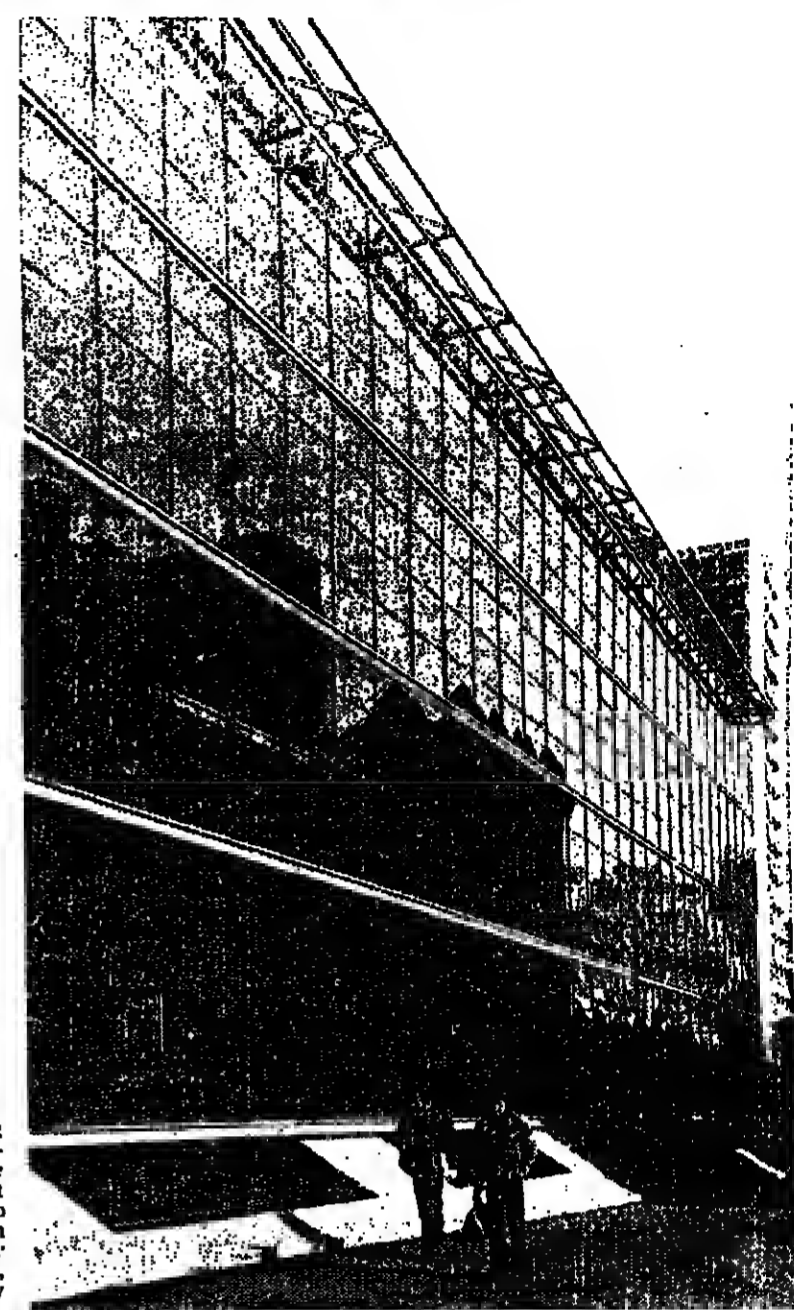
It is because chemistry has a particularly convoluted jargon and complex conceptual base, making the subject utterly opaque to non-chemists? Or is it because chemists are not making significant discoveries nowadays? Or because chemistry cannot be presented in exciting visual terms? Whatever answers to these questions emerge, selectivity clearly depends partly on the nature of the research area, media disseminators, and the nature of the media themselves.

There are a number of practical consequences. One is that the nature of the media may play a small part in determining the careers of future scientists, since entry to a particular field may be affected by the amount of exposure given to each subject by the media.

Another consequence relates to the involvement of the general public in discussions of how scientific research should be

disseminated. One is that the nature of the media may play a small part in determining the careers of future scientists, since entry to a particular field may be affected by the amount of exposure given to each subject by the media.

Another consequence relates to the involvement of the general public in discussions of how scientific research should be



Leicester University's newly-opened library

find out how much research is conducted by this channel, and—if it appears to be a significant amount—how better to inform the research community of its existence.

One obvious question about do-it-yourself publishing is why people decide to publish that way in the first place. There is certainly no single motive at work, but if do-it-yourself publishing is on the increase, one reason could be that authors are finding it increasingly difficult to publish their research through the normal channels.

Commercial publishers are evidently still interested in producing research monographs, but it is sometimes said in the academic world that research workers in some fields are experiencing difficulty in having their work published.

To see whether there is any truth in these rumours, the centre is currently contacting publishers' representatives of contracting and expanding fields of research publication with authors' impressions. If real areas of difficulty are revealed—in the sense that significant research material remains unpublished—it may be necessary to consider new or different methods of production.

Primary communications research involves links of many kinds, but one, perhaps, is of special interest. The dissemination of research is an area in which academic and commercial activities naturally overlap and interact. It is therefore an area in which the alleged conflict of interests between these two worlds is replaced by interdependence.

This joint involvement is significant even in purely financial terms; the export value of all the scholarly journals and monographs produced in the United Kingdom is far from negligible. From this viewpoint, academic institutions are important units of production—surely something worthy of further investigation and distribution making it frequently difficult either to detect or retrieve the material produced.

There is an immediate need to

"The financial stringency of recent years has led to a new emphasis on the problems of producing information for dissemination"

supplied. The debate on ways and means of doing this has flourished so far mainly in the United States, where it has been involving an examination of the applicability of media experience for this purpose.

If Britain follows the United States in this debate (as typically happens after a few years), the study of media transmission of research information should prove equally relevant here.

The visual impact of a research topic may be a significant attribute in terms of its projection by the media; but, equally, might not the visual layout of a research paper affect the ease with which its contents can be absorbed by a fellow-specialist?

Work relevant to this question—for example, studies of optimum methods for presenting tabular material—has been carried out by a number of groups with different backgrounds and interests; but it has never been integrated in a way that allows one to determine whether there is such a thing as an optimum layout for a research paper, or even for an entire research journal.

It may be that such a question cannot even be asked in any sensible way. Some readers of jour-

nal, for example, start at the front end skim through, in the normal way, to the end, while others start at the back and flick through to the front. It is not immediately obvious that an optimum layout for one method of browsing would also be optimum for the other.

In view of the wide differences in journal format, however, it seems unlikely that all can be equally well designed for the

The author is professor of astronomy at Leicester University and director of the Primary Communications Research Centre.

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LETTERS TO THE EDITOR

Frederic Joliot-Curie

Sir,—I have only just seen the review of Maurice Goldsmith's biography of Marie Curie...

He should re-read more carefully the paragraphs on pages 66 to 68 which he criticizes most severely...

Further, if the reviewer had read these pages with the care expected of one who presumes to criticize...

One can perhaps gauge from this the value of the reviewer's other criticisms and especially his unsubstantiated remark that "similar errors lurk in every corner"...

Yours faithfully, E. H. S. BURHOFF, Professor of Physics, University College, London.

Sir,—Since Professor Burhoff does not address the general criticisms raised in my review...

His letter is in the excellent archives of the Radium Institute in Paris, box F28, where I saw it a few years ago...

Yet after Goldsmith describes the letter in his book he immediately goes on to say that "Shortly after receiving it Joliot met Hahn at an international congress..."

The kindest thing I can say about Goldsmith's abused pages is that as they mislead a careless reader as to what "disintegration" Fermi was writing about...

Yours faithfully, ANDREW McCULLOCH, Angles Road, Wivenhoe, Colchester, Essex.

Applied science

Sir,—You ask "what is meant precisely by applied science?" I suggest that it does not actually mean anything...

The SISTERS could be colleges of engineering, and by solving them up as such the Government could at least show that it is serious about encouraging engineering...

Yours faithfully, IAN SMALLLEY, 59 Westwood Lane, Leeds LS16 5NP.

The Scrope Davies papers

Sir,—The prominence you give to the so-called "moral right" of King's College, Cambridge...

Your article (THES, December 31) gave the impression that the important element in the relationship between Davies and Byron was their Cambridge friendship...

In 1818 a group of friends including Sir Francis Burdett, John Cuth Holtzhouse, Douglas Kinaird and Scrope Davies formed a dining club...

The newly discovered Davies papers are reported to contain an interesting account relating to Napoleon's exile on Saint Helena...

Sir,—Your report (THES, December 24) on Mr G. Spencer-Brown's attempted proof of the four-colour theorem...

NORTH AMERICAN NEWS



Michael Binyon reports from Washington

'Mr Fix-it' aims for academic excellence

America's new Secretary of Health, Education and Welfare is Joseph Califano, a tough, 45-year-old lawyer...

He made clear at a press conference that his appointment was not a reward for his services as a lobbyist...

Like his predecessor, Dr David Mathews, Mr Califano is well aware both of the urgent need for reorganizing the department...



Man in the President's eye: Mr Joseph Califano

Former colleagues say that he was energetic, skilful and witty, but also a man of principle.

Since 1963, Mr Califano has been a lawyer in Washington. For two and a half years he was Counsel to the Democratic Party...

Carter heralds 'new era' for colleges

Much is expected of President Carter's new Administration by the world of education...

Already there has been no lack of advice. "The Government's first duty is to disavow publicly the post eight years' federal scenario of expanding public disinterest in education..."

Support of education offered a special opportunity for a new Administration which wants to prove its concern for people, the paper said.

Restoring the Johnson Administration's commitment to the education of the disadvantaged, deliberate efforts to discredit all compulsory education...

Reaffirming a national commitment to access to higher education. The recession and steep rise in tuition rates had begun to restrict access to a growing segment of the middle income class...

Putting an end to higher education's identity crisis. The Government should use universities as a major resource in tackling economic, social and technological problems...

In education, Mr Califano's priority will be to maintain academic excellence. He said he would try to "bring a measure of excellence back to the educational system..."

There is no doubt that the new Administration will have to deal with the many outstanding issues which have stakes in various programmes.

Proposals for a separate Department of Education have been around for a long time. But when Jimmy Carter, twice during his election campaign, promised to create a Secretary for Education...

Bankruptcy takes toll of intellectual life, President of New York University says

City in crisis: fabric and standards both declining

A grim picture of the toll New York's bankruptcy has taken of the city's universities and intellectual life has been painted...

The 33 independent colleges and universities in New York, with an annual budget of \$750m, have been caught in a cost-income squeeze...

There were four even worse. First was the slowdown in the private sector which left colleges with extra room and heavy fixed costs.

The second was the decline in federal support for research and the third was the combined effect of inflation and the recession.

The public sector—the City University of New York—was now Dr. Sawhill said, "in obvious trauma".

On top of this the city's financial crisis had added special problems, one of the greatest was the condition of the schools.

The crisis in the schools also discouraged distinguished teachers from accepting appointments in New York, as they were worried about the education of their children.

The money would be used for pilot projects at five selected institutions.

Other handicaps included the high cost of energy, the deterioration of public transport—especially discouraging to those attending evening classes...

He said: "Consortia should be created to teach disciplines whose student demand cannot sustain individual programmes economically."

The conference also heard a paper by Mr Jason Epstein, editor-in-chief of Random House Publishers, who said that New York was no longer the intellectual centre of the United States...

But though the literary culture and intellectual class, essential for the sustenance of the publishing industry, was now quiescent...

The conference is an important attempt to take stock not just of higher education but of the entire spectrum of intellectual activity in New York...

But the underlying issue which many Americans do not acknowledge is that New York's days as America's intellectual capital are probably passing, never to return.

In the same way the decline in public safety in the city had hit universities. Parents were reluctant to send their children to study where their safety seemed in jeopardy.

A professor of educational administration at the University of Texas is looking for the 60 best high school principals in America...

WEA and Mansbridge

Sir,—Professor Bernard Jennings's idea of Albert Mansbridge, founder of the Workers' Educational Association, was rather one-sided...

For instance, in his history of the Co-operative Building Society—with which he was long associated—Mansbridge draws the distinction between the educated and the uneducated simply in terms of knowing or not knowing one's station in life...

Four-colour theorem

Sir,—Your report (THES, December 24) on Mr G. Spencer-Brown's attempted proof of the four-colour theorem...

On July 20, the American Mathematical Society announced that Professors K. Appel and W. Haken

of the University of Illinois had successfully completed a proof of the four-colour theorem.

Speaking for myself, I was considerably more impressed by Professor Appel's series of lectures in

Honorary degrees

The following have been awarded honorary degrees: Dr Peter R. F. Holt, of the National Institute for Research in Dementia...

Open University programmes

Sunday January 16, 10.30: Medicine and Training for the Health Service. Tuesday January 17, 10.30: Open Forum.

Forthcoming events

Labour Society and Politics in the United States and the United Kingdom. A two-day residential conference on the varied aspects of William Morris's literary, artistic and political work...

A two-day residential conference on the varied aspects of William Morris's literary, artistic and political work will be held at Loughborough University on March 25-26.

"Plastics Antiques", an exhibition of plastic consumer products from the 1950s to the 1980s will be held at the Polytechnic of Walsworth on January 20.

Course news

Three courses on aspects of terotechnology are to be held at Loughborough University as follows: Design and Terotechnology...

Recent publications

New editions of the Directory of Summer Jobs in Britain and the Directory of Summer Jobs Abroad, published jointly by Vacant Work Publications...

and learning in higher education

from September 14-22. The course is for teachers in all branches of tertiary education...

vacants of Hrs. Vacant Work Publications

vacants of Hrs. Vacant Work Publications: 9 Park End Street, Oxford. 50p, orders over 10 copies 40p. Non-members: 60p, orders over 10 copies 50p.

flug techniques, probability concepts

in design, and effects of land use changes including urbanisation. Further details from Miss M. Tomlinson...

judicial study in Undergraduate Science

judicial study in Undergraduate Science. Small Group Teaching in Undergraduate Science. The National Technical Information Service of the United States...

The National Technical Information Service

of the United States has announced the publication of Energy Fact Book-1976, a 432-page compendium of up-to-date information...

need for simplification and leadership

in Washington. But the trouble with the present system is that education is a very small component among the two giant spenders of health and welfare...

What makes top teachers the tops?

A professor of educational administration at the University of Texas is looking for the 60 best high school principals in America...

Education—work link gets boost

The United States Department of Labour has awarded a contract of \$365,000 to the American Association of Community and Junior Colleges...

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Noticeboard is compiled by Patricia Santinelli and Pauline Gamble

A 'third force' of community colleges to complement the university core

Alongside—or even before—the protection of excellence must go the expansion of opportunity. To attempt to divorce these two tasks would be to reject the democratic character for at any rate aspirations of our state and the dynamic quality (hopefully) of our economy. For it is the hope of personal enlightenment and the expectation of social and economic advancement through higher education, rather than pursuit of political scholarship, that has fuelled popular—and political—enthusiasm for the expansion of universities and colleges over the past century. In the wake of the shocks of the past 10 years, and in the face of academic pay freezes, cuts in public expenditure, this mounting of higher education development is still undamaged.

Certainly the tension in this spring has not been fully released. The proportion of young people receiving full-time education after the age of 18 (and of young workers receiving part-time education after the age of 18) is lower in Britain than in most other advanced societies with mature economies.

Admittedly if the output of graduates is made the measure, Britain's higher education effort does not seem to be doing as well as it might. A significant disparity still remains. Not only are the numbers of students in the face of the formidable scientific and scientific achievements of other nations a confident belief in our academic pre-eminence is now more difficult to maintain.

But a third qualification of this picture of Britain's educational underdevelopment is more difficult to dismiss. It is clearly very much at the front of the government's mind when it has taken decisions about the level of public support for higher education over the past three years. It is simply that we cannot afford much more higher education at present.

Of course, some argue that our present economic difficulties are more a reflection of our educational underdevelopment than a valid excuse to postpone further expansion in a post industrial society (or at any rate derive its wealth from traditional Stalinist technological invention and expertise and personal initiative and enterprise become

more important and massive production and collective discipline less so. Through its teaching and research higher education has an important role to play in inculcating these structural level of economy with a higher standard of living and a higher level of education. Maybe it is at times when public expenditure on expanding higher education seems most difficult to afford that it is most necessary.

Sadly the Government does not agree. The names of the 20 extra colleges of education that are in the "list" will be announced at the end of the month. The target of 600,000 students in higher education in 1981 although never formally repudiated, has been effectively abandoned. Tuition fees have been increased at least partly to reduce demand. All this is impressive evidence of the loss of political and social nerve in contemporary Britain that should cause more concern than apparent economic decline.

However, even those (like *THE TIMES*) who reject the Government's present strategy of cutting public expenditure most often that any expansion of higher and further education will have to take place, if at all, against a backdrop of austere conditions. The pressures of austerity may help to produce the right kind of expansion which more prosperous times would almost certainly have seen expansion directed into the wrong channels.

Certainly to imagine that expansion of opportunities for education beyond school in the next 15 years is the simple replication of the institutions and the types of education that have been expanded and created in the 15 years since Robbins would be a mistake. The 1960s were the decade of higher education, the years in which the graceful compromise of the "green fields" universities were built and the decision taken to mass of advanced further education in the form of polytechnics and perhaps also the development of a new type of university.

Notwithstanding for this recent post still has a powerful grip on our higher education. For example, it has played a major role in stimulating "academic drift" within the polytechnics. Above all, it helps to exploit and excuse the

behaviour of the colleges of education when faced with the collapse of their traditional market. In too many cases their own market, the training of teachers. A few colleges were amalgamated with further education colleges. In the majority decided that the only way to overcome the crisis was to develop into liberal arts colleges. Instead of looking forward to the 1980s, too many colleges looked back to the 1960s. Their academic aspirations were too often derived from the model of the new universities established in that decade. Hence the occasionally unseemly rush to validation.

The negative side of this short-sighted policy is already clear. First, the route into higher education for the school leaver with O levels provided by teacher training has been choked off. In the past this was particularly important for girls. Second, the proliferation of small and inevitably weak liberal arts colleges has added to the congestion in a part of higher education which is already well covered by universities and polytechnics. Third, it has increased the number of degrees by allowing to double or a time when many universities and polytechnics still have empty places. The only positive thing that can be said is that it might have been much worse if more money had been available. Austerity at least acted as a check on academic drift.

There was, of course, another way. Instead of lumping on a priori as the third division of higher education, the colleges (during the handful which had the academic strength to survive in the top two divisions) could have become leaders of a revitalized tertiary of university undergraduate education, they could have let their own humane values suffuse the sometimes over-technical world of further education.

Out of this synthesis could have arisen a community college sector which is not a copy of the university but a new type of institution (and educational) framework in which education could be general and technical, which sub-determines the curriculum, and which could provide an alternative focus for the ambitions of individuals and institutions that today seem bewildered by the

university (and in a lesser way technical) model.

The advantages would be the creation of a community college sector as part of an imaginative reorganisation of higher education. It would allow the universities to get on with their real job but to provide the public with a wide range of opportunities for education. Perhaps more important, it would encourage the growth of work of more liberal and less pre-occupied with higher education which is accessible to a much wider range of population.

Above all, such a policy would be in the principles of natural justice which education of 18 to 26 is a well-earned right. The premises of this policy have been set by the vision of "further" education by 19-year-olds and of adult education far from adequate. The promise of day for all young workers made as long ago as 1918 has still not been honoured. Russell's report has already gathered a layer of dust on the education of 19-year-olds and of adult education. This does not mean that the education of 19-year-olds and of adult education should be used up by admitting students to 600,000 students in 1981 as a modest step even in present economic circumstances. But it does mean that the bulk of education should be outside the mainstream of higher education. This cannot happen easily if the force of higher education is dominated by a string of retrospective liberal arts universities and polytechnics. There are rather more institutions that have the community college road through me. They would be much more people than the students who would otherwise be in the colleges which otherwise would be empty for the universities and polytechnics, which would be protected from competition, and even for the Government which save some money.

John Hargreaves discusses the need to protect area studies against opportunist planning policies

Universities must maintain broad horizons

"A nation which does not possess a sound foundation of scholarship is ill-equipped to deal with world affairs." This assertion by the Scarborough Commission on Oriental, Slavonic and East European Studies in 1947 was reaffirmed in the 1960s by two committees of the University Grants Committee.

Sir William Hayter's report of 1961 still found "knowledge of these great areas and their peoples inadequate", and emphasized the need "to build up a body of informed opinion about these countries, both by means of contact between the universities and the outside world and through the education of the students."

In 1965 the application of the argument was extended to Latin American studies. J. L. Parry's committee noted the widespread "indifference and ignorance" of business, governmental and academic communities towards a subcontinent of great potential importance to each of them.

Each committee made specific proposals to involve British universities more directly in what became known as "area studies". In particular to encourage a greater emphasis on social sciences as against the classical and philological studies which originally characterized British scholarship in some of these fields.

In 1977, these general arguments remain valid; changes which have taken place in the relations of Britain with the rest of the world have increased, rather than reduced, their weight. It is almost platitudinous to repeat that Britain's economic future will depend on her relations with such "areas", whether from the short-term perspective of export markets, or in the longer perspective of the world's economic development.

Economic and political success abroad will directly reflect the depth of understanding, and the accuracy of information, of businessmen, journalists, government representatives, and all concerned with the shaping of foreign relations. In addition—a point greatly sharpened since Hayter—good ethnic relations within the UK will require intelligent and up-to-date understanding of societies and cultures in the immigrant homelands; research on such "academic" topics as Indian kinship systems may become extremely "applicable".

Yet in reality, too many attitudes in post-imperial Britain reflect an extreme and dangerous insularity; at one level this may be observed in diminished coverage of foreign events in newspapers or Parliamentary discussion, at another in tendencies for intellectual horizons to become too narrowly focused upon severe domestic problems.

Yet the Hayter and Parry reports stimulated intellectual (and material) investments of great potential relevance to contemporary needs. Centres for research and advanced study were founded by ear-marked UGC grants, or established on university initiative with assistance from foundations or foreign governments.

At present, the area studies panel of the Social Science Research Council recognizes about 30 such centres, and the areas they treat may be roughly classified as follows:

ing on inter-disciplinary problems of these areas.

Although a common disciplinary method of area studies has emerged, the common characteristics of the centres seem clear:

(i) They concentrate a volume of scholarly attention upon areas of the world judged to be inadequately known in the UK.

(ii) They provide facilities for post-graduate study, normally offering facilities for both master's and doctor's degrees.

(iii) Their programmes involve various forms of co-operation between scholars in a number of different disciplines.

(iv) They provide for the study of relevant languages. But the operational problems here are clearly very different in such cases as China, Africa, and Latin America, and the solutions adopted also differ.

Both in research and in postgraduate training, many of these centres have had outstanding academic success. Yet in the present financial ice-age they seem to be proving more vulnerable than other less distinguished academic innovations. The ear-marked grants with which the original Hayter and Parry Centres were established have been absorbed into the UGC general grant; appointments and supporting facilities in these fields may seem obvious targets for inflation prompted economies.

Private sources of support are also under pressure, with foundations needing to retrench awards ear-marked for such studies. The only continuing channel for central public support is the area studies panel of the SSRC; their resources consist solely of a small quota of postgraduate studentships (although some centres claim that the allocation of these can substantially strengthen their position in bidding for funds within their universities).

This quota is pitifully small set against the claims of more than 30 centres; it increased gradually from 39 in 1971-72 to 47 in 1976-77. But even this apparent buoyancy is misleading, considering that within the period the panel accepted additional responsibilities for North American and Western European studies.

In 1961 Hayter found an "anachronistic" concentration upon the study of those areas. Much has changed since then and there are strong academic and public arguments for stimulating new developments; but it seems deplorable that initiatives should be expected to take place at the expense of what might be broadly called "third world studies". It might, indeed, be thought that there are under-worked areas within this field—Caribbean studies, for example—which on grounds of public interest might receive prior attention.

Against what might appear an obvious need to strengthen, or at least maintain, the national commitment to area studies, it might be objected that this need is not reflected in the present demands of employers outside the educational world. Recent enquiries show an overwhelming tendency for graduates of the centres to find employment in universities, colleges or schools.

Not that this is, in itself, unwelcome; the diffusion of knowledge and understanding through the educational system is clearly an essential objective of the whole exercise. And as far as PhD students are concerned, motivation towards an academic career is in most fields and disciplines, often a prerequisite for embarking on the long apprenticeship.

But there is a good deal of disappointment that graduates of some of the admirable one and two year instructional master's degrees which the centres offer have not proved more attractive qualifications.

It might be claimed that the expertise of such persons can prove more valuable to their employers than an academic training, though examples could be found to support a contrary contention that their advice may help to explain policy disasters and lost business opportunities. In any case the supply of such people is drying up rapidly, and it may become important to replace the "old colonialists" by providing post-experience training for the "young volunteer".

Those who have served in developing countries under modern aid programmes have insights into conditions and aspirations which can be uniquely valuable, but will become doubly so when deepened by study in an academic centre representing different disciplines, and differing experiences.

In this respect there may be a significant cultural difference between Britain and the United States, where government and business seem less prejudiced in favour of traditional forms of generalist education. The Federal Civil Service Commission gives explicit recognition to qualifications in area studies, and it appears that many private employers (including newspapers and broadcasters) have similar policies.

It is not easy to obtain full and up-to-date figures, but compilations relating to the years 1971-72 and 1972-73, supplied by the Department of Health, Education and Welfare, go some way to support this view (see table). While some 40 per cent of those taking master's degrees in federally-supported area studies programmes saw this as a step towards further research, and more than 10 per cent towards other forms of education, substantial minorities envisaged employment in business, government, voluntary organizations and journalism.

Of the 316 graduates of these two years who found employment in business and industry, 147 had studied Latin America. 74 some part of Asia, 45 Eastern Europe and the USSR, 25 the Middle East, and 25 Africa. Academically-trained "area specialists" are thus much more widely diffused through America than British society; over 20 per cent of a recent sample of members of area studies associations were engaged in non-academic work.

It is also worth adding that the Department of Health, Education and Welfare encourages this wider outlook by requiring their centres to spend at least 15 per cent of their funds on "outside activities", including service to the business community as well as to other educational institutions.

It is therefore a matter of national interest that the essential care of area studies provision should be protected against improvised attempts to economize by short-term manpower planning; as the Government's recent *Observations on Post-Graduate Education* emphasize: "Meeting the country's need for trained manpower goes somewhat wider than an attempt to match the output of postgraduate students to the demand for specific skills as reflected in the job market."

The need for postgraduate training in area studies should be viewed in the broad perspectives adopted by Scarborough, Hayter and Parry, rather than as something measured by immediate employment opportunities. In a period of economic stringency.

Centres may well wish to extend their "applied" work (where intellectual foundations already exist) by closer links with business schools, or departments of social medicine, engineering, public administration; certainly they should work through appointment boards or directly, to make more widely known what qualities their graduates have to offer.

But their contribution should not be measured by employment figures alone. The danger of Britain becoming an introspective and insular society is even greater than when Hayter and Parry reported; concentration on introspective studies in universities could only make things worse.

The author is professor of history in Aberdeen University.



Caribbean studies: an under-worked area?

LETTERS TO THE EDITOR

Elites and equality

Sir—Your editorial (*THE TIMES*, January 7) stressed excellence, opportunity and relevance, but concluded by advocating 20-25 elite centres. Yet surely what this country requires is more specialist centres offering a range of specialist facilities and courses with some mainstream courses, across the range of higher educational institutes, rather than 20-25 elite centres of general excellence and relevance?

Admittedly, elite centres would be an alternative to widespread egalitarian mediocrity in all the many British institutions of higher education; but would they not also follow the more relevant and attractive combined study courses in sciences, applied and social sciences and humanities?

Even if the elite centres avoided this temptation, the many non-elite courses might not, and national resources would continue to be used to support large, widespread institutions aiming for broad-based academic diversity at the expense of investing resources where there is expertise and strength and in building up centres of specialist excellence.

There would be the difficulty in

many polytechnics that were created out of disparate institutions that it would not be easy to see this as a convincing members of our development boards of the arguments for backing excellence rather than all-round, equality in allocation of resources.

A different problem is that polytechnics and colleges may offer those new courses that have been authorized for support through the networks of the local education authorities and the Department of Education and Science, and the Scottish Education Department, while in universities, providing that the University Grants Committee agrees to provide any essential new buildings and equipment, of whatever sort of new courses they like, irrespective of whether they are joining a "bandwagon" or an already specialist field.

What is needed? The answer is twofold: first, centres of specialist, rather than general excellence of any of the institutions of higher education; second, a national organization that will have the duty to advocate creation of and to monitor the development of courses at all centres of higher education. This body would identify the need

for new educational services as its major role and would coordinate the creation of new courses to ensure that the subjects were available but not offered in greater competition than resources would permit.

It would have the right to question the long-term continuation of courses and to advise against the commencement of new ones. If the remit of the Council for National Academic Awards were to be extended it already has access to the expertise for offering such additional advice.

The fundamental reason for those recommendations is so that any additional national resources that may be made available for higher education can be used not only to support general educational services but to build up the country's expertise in specialist areas.

These some scarce resources would be allocated specifically for most of all to those for which there may be community need. In conclusion, this argument is for specialization rather than for elitism as well as for expanded opportunity.

Yours truly,
R. SHEAN MCCONNELL,
Faculty of the Built Environment,
Polytechnic of the South Bank.

Devolution

Sir—I welcome Professor Ramm's re-stated and meaningful contribution to discussion of university devolution in Scotland (*THE TIMES*, December 31, 1976).

He talks of "national control". Since I do my best to avoid cumulatively loaded phrases in a context where I had better spell out what I body which I want to see, it is some remit in regard to the Scottish universities and the Scottish unit of the University Grants Committee, as present has in regard to the United Kingdom's universities and people.

Talk of academic drift or other dome include, so far as I am concerned, the freedom for staff to move around. I feel sure that the Scottish nation will not differentiate academia working in its midst, any more than the UK discriminate London School of Economics. (By the way a misprint crept in my last academic years outside Scotland. That is the basis of my own commitment to free movement of staff and to the international aspect of university work.)

More generally, I cannot understand which Professor Ramm's allegations between universities are Scottish and the main academic autonomy and freedom. I believe that the Scottish universities have the best possible autonomy and freedom for their own necessary condition for their own autonomy and freedom. I believe that the Scottish universities have the best possible autonomy and freedom for their own necessary condition for their own autonomy and freedom.

Perhaps nothing I can say will reassure Professor Ramm, but it is not too useful to whom any individual can let alone guarantee, since I am sure it is the people's money that is the people's money. I am sure that it is for his future that he should and expound his policy of the people in whose midst he works.

In the process of devolution must be recognized and a desire for independence possibility. To take up an instance in the present rapidly changing political climate is a matter of change request SKILLFUL response.

Yours sincerely,
IAN MACDONALD
Department of Mathematics,
University of Stirling.

Continuing education

Sir—I have read with interest your résumé of the Vocables report on continuing education, and in particular those of its recommendations (*THE TIMES*, December 17, 1976).

On December 10 Hugh Freeman, in an article in *The Times* claimed that a strong Marxist bias existed in the teaching of the report, and in some writer quoted a good deal of evidence in support of his assertion. What little I have heard of OUI instruction on the air confirms his

No reply—in a referendum on the subject has come from those responsible for the teaching and of OU courses. The Vocables on the OU seems to say that about the politics of the report. Pre-eminently the ideological slant is not particularly clear. Why not? It is not the issue of such reports that is concerned with all the figures and organizational paraphernalia and never with actually taught?

Yours sincerely,
J. P. STERN,
Professor of German,
University College, London.

Review pay

Sir—Ossian's complaint about the differential between low payments for reviewing a book and high payments for replacing a church (*THE TIMES*, November 12, 1976) shows his understanding of the difference between intellectual and mechanical work and the ignorance of the circumstances of ordinary life.

The don who reviews a book does so as an extra job in spare time, needs to read the book and can keep or sell it, has no risks or overheads, and is paid direct. The mechanic who replaces a car engine

TABLE: Career choices of graduates of languages and area studies supported by US Department of Health, Education and Welfare

	Higher Education	Other Education	US Gov	Gov	Non-profit Organizations	Business & Industry	International Organizations	Library	Further Study	Unemployed	TOTAL
MA											
1971-2	131	28	18	10	37	136	73	57	786	227	2265
1972-3	151	202	151	100	37	136	73	57	786	227	1960
PhD											
1971-2	541	15	27	67	19	36	25	8	10	70	825
1972-3	511	15	27	66	1	26	20	6	13	55	787

10/1/77

BOOKS

Guide to contemporary heresy

Unfinished Animal: The Aquarium Frontier and the Evolution of Consciousness...

Theodore Roszak is right. The world grows odder. As I fly back from Jerusalem I am entertained by a moneyer monk...

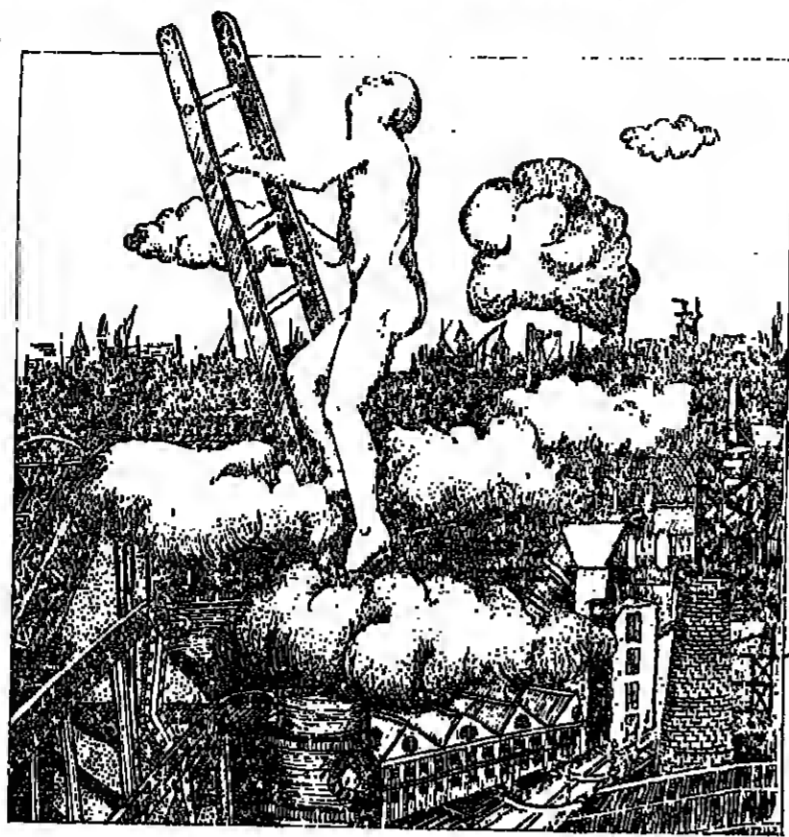
Rozsak has his own examples and he sets them down according to their kind in a four-page box of delights...

We no longer live in the ally 1960s and these peculiarities look like the terminal moraine of counter-culture...

not merely as a complicated mechanism. Man inherits fragments of divinity and recognizes a mirror of divinity in the natural world...

Recognition is perhaps the key word. For two or three centuries we have fallen into cognitivism...

For Roszak the promise is still there and it is to be found in the university underground of gnosis...



WENOU ITOYCA

ind to unlearn the Christian notion of an irreducible opposition between flesh and spirit...

industrial taint: the hidden myth, a wild science, and a humanistic vision...

man of faith, and the man of science says that we must be tentative about what we assume...

All this appears very much to be in itself a paradox. Roszak is the mantle of prophet but he is not the prophet himself...

Love, Labour and Liberty: The Elizabethan Century Scottish Lyric edited by Thomas Mack...

Galt's The Lust of the Lairds was published in 1826 and has frequently been reprinted...

Briefly what happened was this: Galt had intended The Lust of the Lairds to be the final volume of what he called his 'Tales of the West'...

Lairds, legends and lyrics

The Lust of the Lairds: The Life of Mulloch Millings...

The Howlone of Dadsbeck by James Hogg...

Love, Labour and Liberty: The Elizabethan Century Scottish Lyric edited by Thomas Mack...

Galt's The Lust of the Lairds was published in 1826 and has frequently been reprinted...

Briefly what happened was this: Galt had intended The Lust of the Lairds to be the final volume of what he called his 'Tales of the West'...

Mr Crawford's Love, Labour and Liberty, the first volume to be published of Carcanet's promising new Scottish Books series...

BOOKS

Old and new criticism

E.H. Essays for Earl H. Wasserman edited by Ronald Paulson and Arnold Stein

Johns Hopkins University Press, E.H. ISBN 0 8018 1815 X

Wasserman was a distinguished member of the English faculty at Johns Hopkins...

Patient and sensitive attention to the text and to what is another discipline is called the situation in life...

A purer history of Ideas is properly represented by A. J. Kuhn's 'Nature Spirituality'...

the newer John Hopkins, now the distinguished Yale, Hopkins has always been in Europe...

Although I must confess to a weakness for the older style, there is no denying that the most exciting and powerful essay in the collection belongs to the new...

For the old-fashioned, it is in such demonstrations of superior insight, rather than in newly acquired skills of formal description or anti-meta-physical aetiology...

Frank Kermode

The pre-secular world we have lost

Contemporary Transformations of Religion by Bryce Wilson

Oxford University Press for the University of Newcastle upon Tyne, £2.95 ISBN 0 19 713914 0

From the title of these Riddell Memorial lectures one might be forgiven for supposing that 10 years after his Religion in Secular Society...

There are three main lines of argument. One is simply that secularization (defined in the earlier work as 'the process whereby religious thinking, practices and institutions lose social significance...')

But are all these conclusions incontrovertible? (especially in view of the fact that...)

reinforced by Wilson's bleakly chilly tone and elegantly ironic style they first seem to be? The latter is persuasive, if only because of its use of Magic and the Millennium...

With his second preoccupation—the prospects for the 'planners of new religious movements' in the West—Wilson is clear-minded, perceptive and mordant...

For one thing it should not be supposed that 'a transformation of the individual's consciousness... will lead to a new social order'...

But Wilson's major contention—that secularization is the major contemporary transformation of religion—is in many ways the least convincing...

Such rather arbitrary assumptions about social processes also seem at times to distort the supporting detail on which they are supposedly based...

Indeed, just as Wilson's compact history of secularizing social processes often seems far from social reality, so his references to a pre-secular world...

David Mart

A literary reading of Shakespeare

Shakespeare and the Revolution of The Times: Perspectives and Commentaries by Harry Levin

Oxford University Press, £8.75 ISBN 0 19 501982 2

Professor Levin's book consists of essays, occasional addresses and reviews published over the last 15 years...

On the other hand, Levin is notably sensitive to Shakespeare's language. His essays on the functional use of rhetoric in Romeo and Juliet...

The strength of the book lies in the writing. Levin writes extremely well and offers us the experience of a most sensitive mind exploring...

well known, and there is little with which we are not familiar in the essays on the end of Elizabethan drama, or the underplot of Twelfth Night or Coriolanus...

meanings of indicating a real cliff in the Elizabethan theatre would be by the sort of description which Edgewood gives us...

W. A. S. Keir

TES Guide to Careers in Education 1977-78

General Editor: Tony Howerth. Careers information and guidance for all who earn their living (or wish to earn their living) in education inside or outside the UK...



Published by Thomas Nelson & Sons Ltd, Lincoln Way, Windmill Road, Sunbury-on-Thames, Middlesex TW16 7HP.

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BOOKS

Floral regions

Mapping the World's Vegetation: Regionalization of Formations and Flora
By David J. de Laubenfels
Syracuse University Press, \$25.00
ISBN 0 8156 21 72 8

Attempts to map the major plant formations of entire continents or the whole earth began about the middle of the last century; distinguished modern examples are the 1:10 million scale Unesco vegetation map of Africa south of the tropic of Cancer and Köhler's admirably map of the Potential Natural Vegetation of the continents (1964). Apart from their interest to biogeographers and ecologists, vegetation maps are potentially useful in land capability and similar studies.

However, in spite of its title it is not with actual mapping of vegetation maps or indeed to any large extent with maps at all that Professor de Laubenfels's book is concerned: it is mainly about the different ways in which vegetation and floral regions can be classified.

Maps of world vegetation from Grisebach's (1865) onwards are considered and the shortcomings of the classifications on which they are based discussed. A number of these maps are reproduced in monochrome but unfortunately on such a small scale that the details are often difficult to make out.

When the author comes to propose a classification of his own he has already rejected so many of the commonly accepted vegetation categories that he is left with such broad and heterogeneous units that it is hard to believe they will be of any use to anybody and well-known terms have been stretched so as to become almost meaningless. For instance, after discarding the distinction between tropical and temperate forests (because they sometimes

the world's forests into "rain forests" and "seasonal forests", the former including the wet coniferous forests of Pacific North America as well as tropical rain forests and the wet evergreen forests of southern Chile and New Zealand. His Map 13 showing the "Seasonal Forests of the World" makes no distinction between temperate and tropical deciduous forests or even between the broad-leaved and coniferous forests of the Nord-Temperate zone.

Perhaps the author's failure to understand the distinctions between the wholly unlike vegetation types he has grouped together springs from a lack of appreciation of the life-form concept. Neither Raunkjær's life-form system nor any of its successors are even mentioned. Equally serious is the lack of any physiological or ecological basis for what he proposes. This is seen in the discussion of "leaf tenure" which leads to the remarkable conclusion that "there is a chance relationship between evergreenness and deciduousness" and the environment. Surely if one believes that one can believe anything.

Part two, which deals with floristic realms, a field in which the author is evidently more at home, is somewhat more satisfactory, and a chapter on "Major Floristic Boundaries" has some interesting things to say on the meeting of the holartic and neotropical floras. Yet neither in this part nor in part one does there any reference to modern quantitative methods such as community coefficients and gradient analysis.

Nothing is the book justifies the claim on the dust-jacket that it "makes possible for the first time rigorous definitions for formation types and for specific floristic realms". It is impossible to recommend this book.

Paul Richards

For the compleat geographer

Progress in Geography, volume 9
ed. by C. Booth, R. J. Chorley, P. Haggett and D. R. Stoddart
Edward Arnold, £5.90
ISBN 0 7131 5870 0

This volume is the last in this series, the first volume of which appeared in 1969; in 1977 the series will be replaced by two journals, *Progress in Human Geography* and *Progress in Physical Geography*. Regrettably as this new series comes into being, the very diverse contributions to this last volume suggest why this step has been taken; for the rapid growth of the subject now makes it impossible for any one individual to keep abreast of developments throughout the field, at least at a research level.

The original aim of the series, as stated in a general preface in the first volume, was to present informed and informative reports and evaluations of active research within the whole field of geography, and the contributions in this last volume fulfil this aim to varying degrees.

Thus, Dr T. G. McGee, who has written widely on cities in a *Third World*, discusses the interesting idea of an "urban peasantry" or, as he calls them, the "proto-proletariat", the self-employed and family-based traders and providers of services to the inhabitants of such cities. His analysis is very much on South-east Asia, where he has conducted his own research, and his contribution draws heavily on the writings of anthropologists, economists and sociologists. Surprisingly, little attention is paid to Africa, despite the high degree of indigenous urbanization in West Africa and the extensive search on various aspects of market-
log. The author's objective is to provide a conceptual framework,

identify research needs and suggest appropriate planning strategies. He writes in an informal style and, within the spatial limits he sets himself, provides a wide-ranging overview of a neglected topic.

The second contribution, by Professor and Mrs Dilko on "Perception of the Roman World", is very different in character and is written into two parts. The first is a review of what is known about Roman maps and map-making, and is readily comprehensible by the nonspecialist, though the straggle of the presentation may irritate the more critical acceptance of the facts presented. The second part, which is a description of settlement throughout the Empire, also includes a discussion of the terminology of settlement, and presents a readable description of aspects of the geography of the Roman Empire.

Professor I. P. Gerasimov, the doyen of Soviet geographers, presents what is not so much a review of the literature by geographers on the development of the USSR, as a personal view of the changing nature of geography as interpreted by Soviet geographers. He sees geography as inevitably becoming a family of sciences, more precise and quantitative than traditional geography but having a common aim of contributing to the better management of the natural environment. He then discusses some of the elements of the Soviet Union, notably combating drought in the steppes, draining waterlogged areas in Siberia and inter-regional water transfers. He also discusses Soviet work on pollution and on natural systems, though it is often difficult to grasp the substance, particularly of the practical solutions that are claimed as the end-product.

In his article on land and land rent, Professor A. J. Scott provides a valuable critique of French contributions in this field. It is, however, that is almost unknown to English-speaking geographers; one paradoxical consequence is to draw attention to Sir James Steuart, who appears to have been almost entirely ignored by his countrymen. Scott emphasizes the strong orientation of much French work in this field, in contrast to the English-language approach of the non-specialist, though the straggle of the presentation may irritate the more critical acceptance of the facts presented. The second part, which is a description of settlement throughout the Empire, also includes a discussion of the terminology of settlement, and presents a readable description of aspects of the geography of the Roman Empire.

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The External Economic Relations of the EEC
by Peter Coffey
Macmillan, £6.95
ISBN 0 333 18772 5

Here are five books relating to aspects of the European economic and political scene. One draws together a series of essays on the history of integration in Europe; two relate to EEC economic policy, in whole or in part; there is a volume devoted to the theory of economic integration and its practical application in both Western and Eastern Europe; and the final volume is more specialized, dealing with direct investment by the West in Eastern Europe.

Professor Vaughan's compilation of documents begins with what he calls the precursors—for example, the Briand Memorandum of 1930 and the 1944 Draft Declaration of the European Resistance Committee. This is followed by a section on the early steps to European unification from 1947 to 1949 and some key documents relating to early initiatives of the Six which cover the European Coal and Steel Community (ECSC), the European Defence Community (EDC), and the Economic and Planning Council (EPC). This section also provides the student with the texts of the Paris and Rome (EEC) Treaties. Then comes a section on the London and European Free Trade Association followed by one on COMECON (Council for Mutual Economic Aid) and other. The collection ends with sections on ideas and pressure groups (including key speeches by Gaullist, Kennedy and Khrushchev) the Common Market since 1960 and a reading list. The opening chapter sets the collection in context and each section has a brief commentary on the significance of individual documents.

J. T. Cope

Taking Earth's temperature

Geothermics
by Jern Goguel
McGraw-Hill, £11.10
ISBN 0 07 023518 X

Jern Goguel defines geothermics as "the study of the temperature distribution in the Earth and the phenomena which influence that distribution". This is a large subject to discuss in 52 pages, and in the event we are presented with a lively, if idiosyncratic, discussion of thermal aspects of the upper two or three kilometres of the Earth's crust.

After a brief review of the laws of heat conduction Professor Goguel gives a coherent treatment of the effects of topography, erosion, groundwater circulation and change

in variation on upper crustal temperatures and their measurement. He then discusses the problems of identifying geothermal fields and the technical and economic factors which must be taken into account in their exploitation, concluding with a brief discussion of thermal aspects of miscellaneous geological and geophysical phenomena on a variety of scales.

The book is enjoyable, mainly because of the author's considerable physical insight into the problems he discusses. On the other hand it has been useful though it could have been had it contained adequate references—many of the interesting examples cannot be pursued by the reader because he is not told where to look for more information. And many of the problems discussed

have been treated more thoroughly and in some cases more usefully elsewhere. It is a pity that the book has ignored the literature of the last twenty years and has selected those topics which interest him, treating each in a depth commensurate with his interest. This recipe for a less than advanced text is not for the public claim. On the other hand there is no other modern treatment of range of problems.

The translation from the French edition is adequate and occasionally the translator's notes do make difficulties for the unfamiliar with the general

E. R. Oxley

Phosphorus chemistry

The Chemistry of Phosphorus
by J. Emsley and D. Hall
Harper & Row, £22.50
ISBN 0 06 318042 1

The last ten years or so have seen many new books on phosphorus chemistry, especially on the organic side. The slender volume of 25 years ago by the late G. M. Kosoloff has been replaced by the series edited by H. E. L. MacLennan in six volumes (1972-73); the Chemical Society's specialist reports, also on organophosphorus chemistry, have offered a similar number of volumes since they began in 1969, as has the series *Topics in Phosphorus Chemistry* (Wiley Interscience) since 1964. Several one-volume surveys of organophosphorus chemistry have been published, but the volume under review is no mere addition to these. It has its own style and, notably, a content which integrates the traditionally separate areas of phosphorus chemistry, and its attempts to review all the major aspects of the subject. The emphasis is on mechanism, structure and bonding rather than synthesis.

The authors are, respectively, lecturers in inorganic and organic chemistry at King's College, London. The book is directed to readers with a degree-level chemical background who wish to improve their knowledge of phosphorus chemistry.

An opening chapter on phosphorus in the environment examines the terrestrial and aquatic phosphate cycles. It is full of interesting facts on bonding and vibrational spectra. Thereafter, tricoordinate organophosphorus chemistry is surveyed and then P(III) ligands in transition metal complexes. The next chapter, on five- and six-coordinate compounds, mainly deals with the phosphoranes; this following discuss phosphonium salts, ylids, and phosphoryl esters, and also some phosphorus compounds in solution. A chapter on seven-coordinate phosphorus follows, with P-N compounds, and a linear one on phosphorus and phosphorus compounds are discussed. The twelfth and last main chapter surveys the biochemistry of phosphorus, mainly in life (based on ATP); and in death, through the use of phosphorus-containing agents as pesticides and chemical warfare agents. References and a selection

of problems appear at the end of each chapter. Appendices with answers to problems, nomenclature, and antidotes to organophosphorus compounds.

The various chapters are class essays on their subjects, illustrations and structure diagrams are well drawn; and the large size of 563 pages adds to the book's attractiveness. With so much comment, it may seem that the authors have not done justice to the subject, but this is not the case. The book's brevity, at least in the novel approach, is its great strength. The scope and limitations of the writing synthesis. Its primary purpose, at least in the United Kingdom, but it remains a desirable candidate for inclusion in all chemical libraries.

Jan Phillips

Integrating Europe's economy

Post-war integration in Europe
edited by Richard Vaughan
Edward Arnold, £5.95
ISBN 0 7131 5881 6

The Developing Common Market
by John Paxton
Macmillan, £7.50
ISBN 0 333 19018 1

Economic Integration in East and West
by Barry Bracewell-Milnes
Croom Helm, £7.50
ISBN 0 85664 370 X

The External Economic Relations of the EEC
by Peter Coffey
Macmillan, £6.95
ISBN 0 333 18772 5

Direct Western Investment in East Europe
by Incau Spigler
Huldan Books, £6.00
ISBN 0 9502802 16

Here are five books relating to aspects of the European economic and political scene. One draws together a series of essays on the history of integration in Europe; two relate to EEC economic policy, in whole or in part; there is a volume devoted to the theory of economic integration and its practical application in both Western and Eastern Europe; and the final volume is more specialized, dealing with direct investment by the West in Eastern Europe.

Professor Vaughan's compilation of documents begins with what he calls the precursors—for example, the Briand Memorandum of 1930 and the 1944 Draft Declaration of the European Resistance Committee. This is followed by a section on the early steps to European unification from 1947 to 1949 and some key documents relating to early initiatives of the Six which cover the European Coal and Steel Community (ECSC), the European Defence Community (EDC), and the Economic and Planning Council (EPC). This section also provides the student with the texts of the Paris and Rome (EEC) Treaties. Then comes a section on the London and European Free Trade Association followed by one on COMECON (Council for Mutual Economic Aid) and other. The collection ends with sections on ideas and pressure groups (including key speeches by Gaullist, Kennedy and Khrushchev) the Common Market since 1960 and a reading list. The opening chapter sets the collection in context and each section has a brief commentary on the significance of individual documents.

The publisher's claim that this is the only available compilation of major documents in this field is not strictly true, nevertheless this is a useful collection. Vaughan has wisely recognized that if some key documents, which are well known and relatively easily available, are omitted then there is scope to deploy neglected but important material. A particularly good example is provided by the ECSC. The statement by Robert Schuman, heralding the Schuman Plan, has been omitted and this has emboldened Vaughan to include a memorandum by Monnet to Schuman and Bidault. For me this throws new light on the fears and hopes which lay behind the coal and steel Community. Vaughan obviously has the students of modern history in mind in putting this collection together and I could not help wondering how they would tackle the Monnet memorandum. A proper appreciation of Monnet's fears about cartels and the dumping of steel by the Germans would require them to understand the anti-trust articles of the Paris Treaty and in particular the basing point system adopted by the High Authority.

The book contains some gems—one of the best is Lord Denning's judgment in the *Schorsch Meier* v *Remia* case. Here a German company asked for the settlement of a debt to be in Deutschmarks—"If you please". But as his Lordship pointed out English law

did not permit judgments to be given in anything but sterling—this is not always been assumed was a self-evident proposition since as a stable currency it had no equal. However his Lordship went on to say that things were now different. We were part of the EEC and (prophetically) "Sterling floats in the wind. It changes like a weathercock with every gust that blows". In the upshot the claimant was required to pay the plaintiff in Deutschmarks, or the sterling equivalent at the time of payment. Thus does the Rome Treaty reach into the most sacred corners of the realm.

John Paxton's book can best be described as a guide to the EEC, together with a limited commentary on the ECSC and Euratom, and does not pretend to be an original work of analysis and appraisal. It appears to be an updated version of *Into Europe* (1972) which itself was an update of *The Structure and Development of the Common Market* (1968).

It begins with a history of European economic integration since 1945, culminating with the United Kingdom's referendum of 1975. This is followed by a useful chapter on the ECSC and then a chapter on the Rome Treaty. The final chapters are devoted to various aspects of EEC economic policy and one deals with the ECSC and Euratom. The book ends with a short statistical appendix and a select reading list.

If a guide is to be successful it needs to be reasonably comprehensive. Two hundred and forty pages or so is not an over-generous allowance but it should not render the task impossible. One of the more difficult problems is to decide what is important and what is of minor significance and to adjust the treatment accordingly. This requires an intimate knowledge of Community economic policy. The complexities of particular policies need to be explained in a way which is comprehensible to the layman and avoids ambiguities.

Paxton is moderately successful at providing this but I did feel unhappy with the treatment of some subjects. Thus, in the case of regional policy his account contains no reference to the role of the Commission in setting regional aid schemes and in inducing the Council of Ministers to set regional aid ceilings. The general picture of the Rome Treaty is that state aids are prohibited but that they may be permitted as an exception. Regional aids clearly fall into this latter category. To have done otherwise would have meant that Community aid would be a context, while the preamble of the Treaty which refers to the need to help the backward regions. The Commission has the power to call for modifications to regional aid programmes since they may be excessive in relation to a specific problem and constitute a positive competitive advantage rather than a compensation for a particular locational or other disadvantage. If states do not conform the Commission can take them to the Court for a final determination. The reference to the Regional Development Fund on page 194 is odd. The text seems to imply that it exists, whereas the truth is that a plan for a fund with that title was put forward in earlier days but it never came to fruition. It has to be distinguished from the Regional Development Fund which is of more recent origin.

The treatment of ECSC steel pricing on pages 174 to 175 is less than happy. I doubt whether the reader will get a great deal of help in understanding the complex pricing system, with its rules for publicity and internal and external alignments, operates.

The account of EEC anti-trust policy also gives rise to misgivings. A businessman reading the account of Article 85 might be forgiven for assuming that any central government falls due for treatment by the Brussels Commission. But this is not true. Articles 85 and 86 only apply to anti-trust phenomena which may affect

trade between the member states. There is a continuing role for bodies such as the Restrictive Practices Court and the Monopolies and Mergers Commission—they and their counterparts in other member states are still concerned with intra-state restrictions. The selection of cases is rather unbalanced since the account concentrates on vertical distribution arrangements and a few cases where Article 86 has been invoked. This leaves a big gap including horizontal arrangements and practices which increase efficiency by cooperation.

Barry Bracewell-Milnes is concerned with economic integration in both West and East. The first part is concerned with the various issues which arise in economic integration. The author covers a considerable amount of ground including the theory of customs unions and the treatment of taxes and exchange rates. The bulk of the second part deals with the practice of integration in both East and West. The EEC and COMECON. The final chapters broaden out into treatments of the relationship of the EEC and COMECON with third countries (and with each other) and of global issues such as international monetary policy and general trade liberalization.

This is not a book of original analysis. Rather it aims to present the existing corpus of theoretical issues in a readable form and to show how they apply to particular countries. The author's analysis of economic integration would find it a useful introduction to major issues, and the student of European studies, provided he or she had a basic knowledge of economics, would find it particularly helpful. My main criticisms are that the section on proceeds is relatively thin, that the institutional details are not strictly relevant and that the book could be more tightly organized. There is no index.

The book by Peter Coffey is a useful compilation of documents in the EEC being concerned with its external economic relations. This is essentially a book of description rather than detailed analysis, which treats such various issues in an historical fashion. At the same time, as regards external economic policy, it is comprehensive in a way which is comprehensible to the layman and avoids ambiguities.

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Demis Swann

Diversifying

The Emerging European Enterprise: Strategy and Structure in French and German Industry
by Gareth P. Dyas and Helmut T. Thauheiser
Macmillan, £12.00
ISBN 0 333 17953 6

The authors seek to test against French and German experience the stage model of the evolution of the corporate enterprise developed from studies of the biggest American firms by Chandler and Scott. This model suggests that the largest firms pass through stages in which changes of structure are closely linked to changes in strategy. As the firm grows bigger its strategy is to diversify its manufacturing and marketing activities. As it diversifies it moves through the stage of being a multidivisional enterprise whose specialized managerial departments are based on function in the further stage of being a multidivisional enterprise in which the divisions are based on a continuous managerial oversight of one product from manufacturing to marketing. The conclusion is that a study of the largest one hundred corporations in both Germany and France supports this hypothesis.

In Germany only 5 per cent of the sample of firms had multidivisional structures in 1950; almost half of them had evolved in this direction by 1970. For France the results were similar. These organizational changes were, although this is less easy to demonstrate statistically, chronologically related to the diversification of the enterprise in both countries; the pace of change was faster after 1960. Nevertheless, the proportion of the largest enterprises to have diversified remains smaller than in the United States and Britain. In Germany this could be explained by the prevalence in the sample of mesohierarchical firms requiring the commitment of large fixed assets in one technology to diversify at all. In France, in both countries it could be explained by the fact that up to the date this book stops the growth of consumption of many products was still so rapid that the firm had no need to diversify. Diversification in Germany has, in fact, been more towards products depending on a related technology than in the United States, and in France the growing American pattern of diversification towards quite unrelated products remains relatively rare.

In spite of these differences Servet-Schreiber's lucubrations no longer have much applicability. Increasing competition at home and abroad, the acceleration of technological change and the realization that what matters is marketing were eliminating before he wrote and are still eliminating, the authors suggest, whatever importance differences may temporarily have existed in the behaviour of the major firms in the biggest capitalist economies, just as the model on which the book is based suggests they must.

But lurking beneath the surface of this useful and sensible hook is the awkward question of whether the European enterprise, in howling the shape of the new organizational plan, has also borrowed its spirit. The skin of capitalist enterprism has always changed shape and colour to match the economic background; underneath the skin they may not be so alike. The authors have elaborated the categories in the original model in order to adapt it more easily to European conditions, but fitting 200 firms into these categories is still inevitably often an arbitrary procedure and might well be disguising the true nature of many of the firms in question. Dislateral managers to France and Germany remain rather cringing creatures compared with their American counterparts, shuffling, ill-rewarded, and unable to venture far on their own. They live in unwholesome respect of the questionable authority of their superiors. Even the largest firms do still believe in strange and quirky ways that seems often to be the institution of the strange and quirky people who continue to dominate them, in spite of these formal changes in structure.

Alan S. Milward

F. A. HAYEK

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Robert H Silin

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BOOKS

Economists' stone?

The Path of Economic Growth by Adolph Lowe, assisted by Stanford Pridemore, with an appendix by Edward J. Nell
Cambridge University Press, £10.00
ISBN 0 521 20888 2

Economists generally reason from a set of initial conditions: "Assume the economy is growing in equilibrium at 4 per cent per annum. A change in conditions is then hypothesized: "The rate of labour force growth doubles" (no reason specified), and conclusions are drawn by describing the resulting conditions. There is seldom disagreement on the first two steps; it is the last that confirms the popular usage of two economists producing three conclusions.

Professor Lowe rejects this entire "hypothetical-deductive" or "positivist" procedure as inappropriate and misleading, especially in the analysis of capital-using economies. Instead he suggests analysis should start from given initial conditions and predetermined terminal conditions or "macrogoals": "Assuming the additional labour by adjusting to a new equilibrium growth rate." The economist's task is to determine what and how much capital are necessary to achieve the macrogoal ("structural analysis") and what behavioural assumptions must be imposed on the system ("force or analysis") to ensure that the system actually produces the necessary structural adjustment.

This method of "instrumental inference" (first introduced by Lowe in *On Economic Knowledge*, Harner & Row, 1965) emphasizes both the structural adjustments and the associated feedback mechanisms that must exist that the system does not become static in orthodox comparative statics or in unrealistic transition. The specification of "efficiency" constraints (that the transition or "traverse" takes the shortest time without "misinvestment") leads to two conclusions: should produce one answer. If there is more than one answer, it means the economists have made different behavioural assumptions, i.e. a "positivist" difference.

Lowe demonstrates structural adjustment in a two-sector (vertical) model which more fully characterizes the Austrian stage (horizontal) approach. This combination produces two special points: the division of the capital sector into sub-sectors, one producing equipment for both sub-sectors, one producing equipment for the consumption sector; and thus, the importance of intermediate goods and working capital in the adjustment process. To simplify demonstration, change in labour growth, natural resource availability and embedded technical change, uniform fixed production coefficients are assumed. (Professor Nell's excellent appendix demonstrates the similarities of this analysis with modern non-neoclassical approaches to capital and growth.)

The force analysis involves specification of the appropriate response

mechanism: price, quantity and market-clearing elasticities for exchange commodities which maintain and plan instructions for communal economics.

Lowe recognizes that the efficient paths that he derives may never exist, yet he argues that they represent an ideal standard by which the efficiency of actual traverses can be judged. Further, the author's "highlights" . . . the zones of danger on the traverse where the system is likely to miss its equilibrating course and, thus, it becomes an indispensable tool for the control of actual economic growth.

Lowe justified for his "Friedmanite" and the "Keynesianist" speak with one voice? Economists broadly agree on what is necessary, e.g. British needs more investment. They disagree on how, or should public expenditure be cut? Lowe's justification for his system relies on the (positivist?) judgment that "control of actual economic growth" is both necessary and possible; "the minimal requirements . . . [efficient] in the short-term incentives and the range of information that characterize a regime of decentralized decision making. One need only spell out these requirements to realize the need for public guidance or guidance at all critical turns."

Lowe's analysis suggests that although a command system could satisfy the "macro requirements," so should a decentralized system given sufficient ex-ante information and the proper decision algorithms (or sufficient future market signals). But can the required information be discovered for either system? It is not more often the case that before one control package (budget or five-year plan) is implemented another exogenous shock, that the economy is always traversing traverses? Lowe recognizes part of the problem in discontinuous technological change where "a subsequent innovation gets under way before the system has been able to complete the adjustments of the preceding stage which simplification will be disregarded in our analysis". More importantly, if the system generates its own changes (if its development is more biological than mechanical) then "guidance at all critical turns" may be perfectly useless. The kind of information any system requires today, to specify the traverse may only be available tomorrow.

Although not all economists would agree with Lowe's claim that "instrumental analysis has a better valid grounds than the conventional techniques of positive reasoning," his excellent specific analysis represents an important advance in a neglected area of modern economic theory.

J. A. Kregel

Quantitatively speaking

Basic Econometrics: An Introductory Text for Economists by Monte Carlo experiments illustrating sampling distribution concepts. Mayes and Mayes offer a more condensed and more empirical exposition of the theory, but include numerous examples and applications. The applications are carefully selected, introducing the reader to a variety of interesting statistical sources. The authors also thoughtfully provide outlines of the more complex calculations, and comment on the interpretation of typical output from statistical packages.

Both books are pitched at an elementary level, but nevertheless achieve considerable originality in their presentation. Each book proceeds from introductory probability to multiple regression and concludes with an outline of simultaneous equations estimation. Common's book is careful and thorough exposition of econometric theory; the algebra is kept to a minimum consistent with a reason-

able standard of rigour, and the discussion is enlivened by Monte Carlo experiments illustrating sampling distribution concepts. Mayes and Mayes offer a more condensed and more empirical exposition of the theory, but include numerous examples and applications. The applications are carefully selected, introducing the reader to a variety of interesting statistical sources. The authors also thoughtfully provide outlines of the more complex calculations, and comment on the interpretation of typical output from statistical packages.

While both books are computer typeset, Common's book is made difficult to read by the small and unattractive typeface and by the curious design of tables and diagrams; it is unfortunate that the features are common to all books in the Longman Modern Economics series. It is to be hoped that the publishers will find some better way to keep down their costs.

M. C. Casson

Equilibrium

The Theory of Equilibrium by A. K. Dixit
Oxford University Press, £2.95
ISBN 0 19 377080 4 and 5

What is the point of a theory of equilibrium growth? The theory does not correspond with the actual development process, and it is not clear why some economists should be interested in it. The author's answer is that it is useful to have them brought together in this manner, especially the whole enterprise. The author does not understand the original essays are dispersed in a rather wide variety of economic theory is to be published.

The model of an economy in equilibrium is both an interesting and useful one. It is certain that the model is of considerable significance in both the theory and practice of development. The theory of growth is a useful one, and it is interesting to see it used to describe the economic process. The model is a useful one, and it is interesting to see it used to describe the economic process.

In answering the question whether the market would do it, the theory provides a positive answer. Even if the theory is not a full answer, it is a good starting point.

The Economics of the Arts edited by Mark Blaug
Martin Robertson, £8.45
ISBN 0 8520 122 3

In certain labour-intensive service industries, such as the production of orchestral concerts and theatrical plays, technical progress cannot be shared by the labour force. This book shows that the effect of technical progress is to reduce the demand for labour and to increase the demand for capital. The author argues that this is a socially desirable outcome, and that the government should intervene to ensure that the benefits of technical progress are shared by all members of society.

Studies in the Russian Economy before 1914
By Olga Crisp
Macmillan, £10.00
ISBN 0 333 16907 7

Dr Crisp is the leading authority in this country on pre-revolutionary Russian economic history, and this volume brings together various of her studies in the subject produced over a period of more than 20 years. A number of the contributions have long been standard reading for students, and fairly recently came out in paperback. The volume is a valuable addition to the literature on the Russian economy before 1914.

This book will receive a wide welcome from specialists and non-specialists alike. The growing interest in the subject has not been matched by a corresponding growth in the literature, and many standard undergraduate texts have become dated. An enormous number of modern studies, Marxist and non-Marxist, concerned primarily with overall schematic patterns has appeared in the last few years. This book is a valuable contribution to the study of the Russian economy before 1914.

Malcolm Falkus

BOOKS

Russian economic history

Studies in the Russian Economy before 1914
By Olga Crisp
Macmillan, £10.00
ISBN 0 333 16907 7

other published in Paris in 1972 as part of the collected conference proceedings. The latter is a masterly general and wide-ranging essay with the title "The Pattern of Industrialization in Russia, 1700-1914". This paper emphasizes the point that Russian backwardness was not simply a nineteenth-century phenomenon. On the contrary, Russian backwardness and poverty relative to West European nations existed well before Peter the Great's time, and had profound consequences on subsequent development.

The book is not without blemish. There are a few minor though irritating misprints. More important is the failure to include a single map. It is not merely inconvenient for the reader to have to consult a separate atlas unless the author's right emphasis; it is inexcusable in view of the numerous place-name changes from the Tsarist to the Soviet era. The atlas does not make a wholly satisfactory book for the subjects covered. However, it is a valuable contribution to the study of the Russian economy before 1914.

Malcolm Falkus

Money and the performing arts

The Economics of the Arts edited by Mark Blaug
Martin Robertson, £8.45
ISBN 0 8520 122 3

In certain labour-intensive service industries, such as the production of orchestral concerts and theatrical plays, technical progress cannot be shared by the labour force. This book shows that the effect of technical progress is to reduce the demand for labour and to increase the demand for capital. The author argues that this is a socially desirable outcome, and that the government should intervene to ensure that the benefits of technical progress are shared by all members of society.

will associate the conductor with the Dodo. What should be the role of the public sector faced with a chronic condition? Has it performed its role efficiently in the past?

The power—and the shortcomings—in answering these questions, and the rationale for public subsidies to the arts, evaluating public expenditure on the arts, and special problems on the arts, and special problems. The latter includes an elegant exercise in political economy by Lord Robbins and an interesting economic analysis of the demand for Broadway theatre tickets by T. Moore.

This study should be read by all those interested in the economic and organizational aspects of the arts. One leaves the book feeling reasonably optimistic about the economic future of the performing arts, and thus, an encouraging sign that its very recognition has already contributed to recent expansions in public and private under-writing of the arts.

J. R. Shaunan

Competitive conduct

Industry and Competition: Industrial Case Studies
By R. W. Shaw and C. J. Sutton
Macmillan, £10.00 and £3.95
ISBN 0 333 18027 5 and 19692 9

All too often micro-economic theory textbooks present models of markets in a vacuum. This text applies theory to 11 case studies each illustrating different aspects of competitive conduct. It provides examples of new entrants to an industry and their effects on prices, diffusion of innovation and excess capacity, as in petrol, washing machines and dry cleaning; examples of dominant firms, the role of patents in pharmaceuticals and oligopoly pricing in petrol, cement and fibres. Non-price competition is illustrated by the car and detergent industries, and structural and technical change is described in textiles and grocery retailing.

The industries are well chosen. It is so easy to fall into the trap of describing the competitive function of reducing prices and the monopoly profits of established firms. Comment on the case of oligopoly pricing is hard.

(prisoner's dilemma) with relatively high fixed costs and the evidence shows that firms avoid price-cutting when there is excess capacity. The chapter on innovation is particularly good. IBM is an example of a dominant firm with price and technical leadership. Dry cleaning shows how innovation was introduced and diffused through new entrants in pharmaceuticals, patents have led to restructuring through price determination and patent allocations for NHS drugs. There is no analysis of governments and bureaucrats and their increasing involvement in industrial policy through regulation, restructuring and investment in analysing cars, there is only a passing reference to import competition and state financial assistance.

An excellent analysis of textiles using a vintage capital model, shows the industry's long-term adjustment process with price competition. It is less clear why it would be understood without a lengthy analysis of the economic logic of government policy (for example, the 1959 Act which offered subsidies for scrapping machinery and for leaving the industry in a market which operated a price ceiling, known as the "captive" price, from cheap imports). This example is especially relevant to the current industrial strategy: what can policy-makers do, if anything, about such industries?

Keith Hartley

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Development truths

Assess on Development
by P. T. Hauer
Weidenfeld & Nicolson, £6.50 and £3.95
ISBN 0 297 77220 1 and 77221 X

From its largely forgotten origins in the 1930s, development economics blossomed rapidly in the postwar period as a political influence and source of employment for social scientists; as yet it shows no sign of withering. Its leading ideas have been in harmony with predominant political opinion. The faith in economic mechanisms that persisted until 1931 has been replaced by belief that economic order and progress are administrative creations. Relationships of prices and costs have been rated less significant than technical coefficients. Individual and other private actors in the world economy have been subsumed in "nations" credited with interests, aspirations, needs and self-respect regarded as appropriate categories of economic analysis. Further powerful evidence has been discovered by richer governments that financial and technical aid given in the name of development could be an important dimension of foreign policy.

The result has been that at its most representative worst development economics has been marked by ignorance or neglect of elementary economic theory, collectivist and nationalist ideology in which personal preferences and ambitions are held in contempt, lack of historical sense, and reluctance to relate hypotheses to experience. Political objectives have been paramount and political acceptability rather than truth, has determined the standing of propositions and doctrines.

Not everyone has been taken in. Dissenters from orthodoxy have been economists strongly attached to economic reasoning, possessed of historical sense, or endowed with intellectual integrity better than average. No doubt membership of a minority ideology has also helped. Examples include S. H. Frankel, Jacob Viner, H. Myrdal and H. G. Johnson. Foremost among them has been Professor Nur, who in his own advantage of undertaking detailed empirical work on the Malayan rubber industry and West African development economics and came to the subject from the experience of his matter most of the experts were. Since the appearance in 1957 of his Cambridge Economic Handbook, *The Economics of Underdeveloped Countries*, written jointly with Basil Young, and his more prolific, patient, tireless critic of the literature of his subject, never flinching in asking the awkward question ("Who is Asia?"), citing the inconvincible fact, or seeking out the buried assumption.

There now appears a new edition of his papers, containing about three-fifths of what was provided under the same title in 1971. Omitted or a paper on "the spurious consensus" in development economics, the "case studies" (which were mainly of West Africa), and the review articles on Myrdal, Lewis, Rostow and others. Retained are eight papers written mostly revised and expanded in 1971. Their topics include: hypotheses of the vicious circle of poverty and the widening gap, control planning and the role of colonialism and underdevelopment countries and the underdeveloped economies; the UNCTAD of 1964, "myriad word political pamphlet" appeared. In hardback, the abridged edition cost £1.75 more than did the larger collection of available and could well be first choice on the funds of any student of development economics—a practical guide to be kept before he enters the tropics of the mind.

BOOKS

Perfect competition

Supply in a Market Economy
by Richard Jones
Allen & Unwin, £5.95
ISBN 0 01 330270 X

Richard Jones's *Supply in a Market Economy* is a prolonged defence of the standard, neo-classical, profit-maximising, "let's assume everyone has perfect knowledge" approach to the theory of the firm. It has the traditional emphasis on perfect competition—hence the title—since only perfect competition normally provides a unique supply curve. For one who is not convinced that perfect competition does, did, or ever will exist there is special interest in reading this book in order to defend the traditional view. In addition Jones gives a fairly detailed outline of conventional theory and a very brief survey of alternative theories. Considerable space is given to presenting a part of the mountain of empirical evidence which has been marshalled against "perfect" theory. Economics of large-scale production, the divorce of ownership from control, the demise of the entrepreneur, the domination of the manufacturing industry by oligopoly—evidence on all of these and more is dispassionately accepted and having much force and so showing that the assumptions of the perfectly competitive model are not generally valid. Because of this evidence "the most significant single implication of the case expounded by writers such as Galbraith has been that economic theory is irrelevant to the understanding of modern capitalist society." This, Jones believes, has led to "a most unsatisfactory state of affairs" which a distinction is drawn between economic theory

and "something which is the economics of the real world. This distinction is not fair, because perfect competition is about the real world. Firms may not be small, nor managed or monopolies, nor fact all the assumptions of perfect competition may well be unrealistic. The important question is whether the predictions made by the model are in general correct. If they are not, it is for firms, is the model useful? Jones concludes that the arch-defender of competitive faith—have no forward evidence to support perfective power. But he points out, "large detractors" it does not predict. Chapter seven is chief give examples of the usefulness of these models of supply and demand, and which produce some realistic conclusions from such a view. The assumptions of the model may not fit any of the facts examined, but the model is useful. Maybe so, but its uncritical acceptance is to be drawn are simple and consistent with scores of models. The real problem is oftenly used to be valid, but specific conclusions about firms, rewards to factors in economics, the control of prices and so on. And in these areas it would be useful to know if its assumptions are valid. Critically weakens the model's claim for its use. It is possible to be sure that the model is valid or not? C. J. Harrison

Ownership

Relative Income Shares
by John King and Philip Regan
Macmillan, £1.95
ISBN 0 333 18454 8

Inequality in the distribution of personal income depends on the control of personal wealth, on the distribution of earned incomes and on the relative importance of income from employment and property. This in turn depends on the control of the firm. The outline begins with a critical review of concepts and a key to control on what they see as the feature of the topic: the share of property income as a whole. For them "it is the social fact of ownership—which includes property incomes of all types and which establishes their underlying unity." On the basis of this argument the author concentrates upon income distribution in terms of labour and corporate profits plus interest and rent plus the imputed property income of the self-employed. There is an extended discussion of the "constancy" to empirical results hypothesis—that labour's share of profits remains constant. The weight of the evidence they see "comes out against the hypothesis." On the widely accepted theory of a rapid decline in the share of corporate profits since 1954, the authors show that the decline in the share of property income as a whole is as much less.

Their discussion of the main theories which set out to explain the observed empirical pattern is presented clearly, though a synthesis of various theories would have been helpful in putting the pieces together and in providing a clearer perspective for the reader. In view of the changes in the economy and social structure of modern industry, it would have been more attention given to examining the relationship between the shares of national income and the distribution of personal income in the modern world of pervasive private ownership and profit sharing schemes. The interests of the different classes are no longer so clear.

Douglas Rimmer
P. C. McMahon

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LONDON THE UNIVERSITY OF BRISTOL DEPARTMENT OF MATHEMATICS Applications are invited for the post of Lecturer in Mathematics.

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The British Council invites applications for the following posts: Lecturer in English (Zambia), Principal, Waterford Regional Technical College.

English Language Teaching Assistants (Soviet Union) For universities and institutes of higher education. A degree with PGCE or relevant experience.

UNIVERSITY OF MALAWI CHANCELLOR COLLEGE ASSISTANT LIBRARIANS Applicants should be graduates with appropriate library qualifications.

UNIVERSITY OF DUBLIN ERASMUS SMITH CHAIR OF MODERN HISTORY The Erasmus Smith Chair of Modern History (founded 1762) will fall vacant on 30th September, 1977.

NEW ZEALAND THE UNIVERSITY OF AUCKLAND DEPARTMENT OF PSYCHOLOGY Applications are invited from suitably qualified persons for the post of Lecturer in Psychology.

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Polytechnics continued



School of the Social Sciences and Business Studies... Head of Department (Burnham Grade V)... Candidates to take special responsibility for providing academic leadership and stimulating research in Business Studies...

ULSTER COLLEGE THE NORTHERN IRELAND POLYTECHNIC Faculty of the Arts LECTURER II in POLITICS Salary Scale: £3,279-£5,493 plus £312 supplement... The School of Philosophy, Politics and History requires from September 1, 1977, a Lecturer II in Politics with special interest in Russian Politics...

Assistant Director (Finance and Planning) Salary: £11,568 pa Inclusive of London Weighting... The opportunities associated with this post are for resource planning and management, with special reference to finance and buildings...

Middlesex Polytechnic DUNDER COLLEGE OF TECHNOLOGY LEADERSHIP IN STATISTICS/OPERATIONAL RESEARCH Applicants should have a good honours degree in Statistics or in Mathematics and Statistics and should have an academic qualification and/or practical experience in Operational Research...

LONDON DEPARTMENT OF TECHNICAL EDUCATION... INSTITUTIONAL AND INDUSTRIAL ENGINEERING... Applications are invited for the post of Principal Lecturer in Occupational Engineering... Applications are invited for the post of Lecturer Grade II (Occupational Therapy) in the Department of Occupational Therapy...

TESSSIDE THE POLYTECHNIC DEPARTMENT OF MEDICAL AND NURSING STUDIES Applications are invited for the post of Lecturer in Accounting and Finance... To commence early in 1977. The successful candidate, who should have a degree and/or professional qualifications, will teach accounting and finance on a range of full-time and part-time degree, diploma and professional courses...

Colleges of Further Education BRADFORD COLLEGE RE-ADVERTISEMENT SCHOOL OF TECHNOLOGY & DESIGN SENIOR LECTURER IN TEXTILES/FASHION The successful applicant will be a Senior Lecturer responsible for teaching Fashion Technology in the full-time and part-time courses...

Colleges of Further Education BRADFORD COLLEGE SENIOR LECTURER IN TEXTILES/FASHION... The successful applicant will be a Senior Lecturer responsible for teaching Fashion Technology in the full-time and part-time courses... ARAC or BA in Textiles/Fashion or equivalent and have suitable experience, preferably in education and/or industry...

St. Martin's School of Art 107 Charing Cross Road, London WC2H 0DU... The course is designed for officers of Local Education Authorities and other administrative agencies concerned with the educational service and for those in responsible positions in schools, colleges and other educational establishments...

Principal Lecturer in Fashion required from 1 April 1977 to be responsible, as Course Director, for the overall organization of a 4 year Fashion/Textiles leading to BA (Hons) Degree...

REMINDER Copy for Classified Advertisements in THE S should arrive not later than 10.30 am Monday preceding the date of publication... For Sale and Wanted CHROMKEY ON CASSETTE... Applicants should have a good honours degree in Statistics or in Mathematics and Statistics and should have an academic qualification and/or practical experience in Operational Research...

Colleges of Higher Education

the College of Ripon & York St John LECTURER GRADE II (OCCUPATIONAL THERAPY) Applications are invited from well qualified men and women for the post of Lecturer Grade II in Occupational Therapy in the Faculty of Human Voluntary College of Ripon & York...

Colleges of Further Education LONDON... Applications are invited for the post of Lecturer in Accounting and Finance... To commence early in 1977. The successful candidate, who should have a degree and/or professional qualifications, will teach accounting and finance on a range of full-time and part-time degree, diploma and professional courses...

Institute of Higher Education ROEHAMPTON INSTITUTE OF HIGHER EDUCATION Applications are invited for the following post at SOUTHLANDS COLLEGE PRINCIPAL LECTURER or SENIOR LECTURER in MULTICULTURAL STUDIES

UNIVERSITY OF LONDON INSTITUTE OF EDUCATION DIPLOMA IN EDUCATIONAL ADMINISTRATION Applications are invited for the course leading to the University of London Diploma in Educational Administration beginning in October 1977. This is a 1-year course extending over two academic years; attendance at the Institute will generally be on one afternoon per week for the first year and on one day each week in the second year.

UNIVERSITY OF BRADFORD A PHD PROGRAMME FOR INDUSTRY Electrical and Electronic Engineers... Further details and application forms obtainable from the Registrar, University of Bradford, Institute of Education, Deane Way, Bradford BD11 1QT. Early applications are advised, preferably by 15 March 1977.

General Vacancies

INSTITUTE OF CHARTERED SECRETARIES AND ADMINISTRATORS CAREERS OFFICER The Institute requires a Careers Officer whose principal duty will be the promotion of the career of a Chartered Secretary by close liaison with employers and teaching establishments, including universities, and by acting as adviser and counsellor as necessary to prospective students.

CONFEDERATION OF BRITISH INDUSTRY ECONOMIC RESEARCH DEPARTMENT The CBI is strengthening its Economic Directorate with the addition of a Research Department, which will be responsible for research into and analysis of applied economic problems relevant to the CBI's policy work. Applications are now invited for posts in this Department. Both posts will require a good degree in economics/statistics; one at least will also require a postgraduate qualification, several years' experience of research in applied economics and preferably some published work.

Photographic Publishing FOCAL PRESS, the Publisher of the world's most successful range of photographic books, would like to meet men or women who could make a real contribution to their editorial team. Our list covers the range of visual communications and equipment, with a strong informational bias, and the successful candidate is likely to be at ease with technological and market data, will enjoy working with authors and will have considerable ability in communicating ideas.

Deputy Chief Inspector Further and Higher Education required to undertake overall responsibility for Inspectorate co-ordination and to advise on policy across the whole field of further and higher and non-vocational education in Inner London. Within the aided and maintained services, the Authority there are 5 polytechnics, 23 specialist and general colleges of further and higher education, 4 colleges of art, 121 non-vocational education establishments, 1 college of education (technical) and 3 colleges of education.

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LOCAL GOVERNMENT TRAINING BOARD ASSISTANT EXAMINATIONS OFFICER

Applications are invited for this new post which will be concerned with the development, revision and introduction of the examinations which the Board administers. Candidates should have experience in the methodology associated with examinations and in the application of computing techniques to the processing of examination data. The post will involve the successful applicant in committee work associated with these examinations, and in the preparation of any revisions to examination arrangements.

PHOTOGRAPHIC PUBLISHING FOCAL PRESS, the Publisher of the world's most successful range of photographic books, would like to meet men or women who could make a real contribution to their editorial team. Our list covers the range of visual communications and equipment, with a strong informational bias, and the successful candidate is likely to be at ease with technological and market data, will enjoy working with authors and will have considerable ability in communicating ideas.

Staff Inspector for Non-Vocational Further Education required to inspect and advise on the development of adult education in the Authority's aided and maintained non-vocational education establishments, to be responsible for advice on educational aspects of the work of the Youth Service, and to coordinate Inspectorate activity within the field. Applicants should have an appropriate academic qualification and substantial relevant teaching and organisational experience. Salary range: £6,874 - £10,027 (inclusive of London Weighting) with possible progress to £10,980.

Deputy Chief Inspector Further and Higher Education required to undertake overall responsibility for Inspectorate co-ordination and to advise on policy across the whole field of further and higher and non-vocational education in Inner London. Within the aided and maintained services, the Authority there are 5 polytechnics, 23 specialist and general colleges of further and higher education, 4 colleges of art, 121 non-vocational education establishments, 1 college of education (technical) and 3 colleges of education.

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Film Publishing GRADUATE to join Film Publishing Co. Ltd. (Pty) Ltd. (Pty) Ltd. Must be both manager and secretary at first, as well as editor, writer, and printer. Must have 2-5 years' experience in film publishing. Salary: £5,000-£6,000 per annum. Details and application forms from the Education Officer (EO) (Establishment 2A/1), Addington Street Annex, The County Hall, London SE17PB. Forms to be returned by 28 January 1977.

Overseas

DARWIN COMMUNITY COLLEGE NORTHERN TERRITORY, AUSTRALIA HEAD OF LEARNING RESOURCES CENTRE Pos. No. 116 38 SALARY: A\$24,971 The Head of the Centre will be responsible to the Principal for the development and co-ordination of the Centre within the framework of policies decided on in consultation with an Advisory Committee of outside advisors. THE COLLEGE The Darwin Community College, opened in 1974, was designed to meet the varied educational needs of both Darwin and the Northern Territory of Australia. The programme includes: Health studies, social and ecological studies, linguistics, teacher education, creative and applied arts, business and management and technology and science. Vocational courses are offered at pre-degree, post-degree, sub-professional, graduate and post-graduate levels. A comprehensive range of adult education, general interest and ad hoc courses is also offered. College programmes are planned and adopted in consultation with groups from the community.

THE LEARNING RESOURCES CENTRE The nucleus of the Centre is the student library system of the College, with two other in Darwin, and a small mobile unit in the Darwin Territory. Clients include staff and students participating in the College's programmes and other residents of the Territory. The library collection has developed rapidly in the past 2 1/2 years to over 50,000 volumes, a substantial audio-visual collection and a growing historical collection on the northern Territory. Accumulated growth has been recently maintained over the next three years, with a subsequent growth rate of 10 per cent per annum. Development of media production units within the Centre has also been recommended. The present staff numbers 31 and the 1976 book-value is A\$18,000. QUALIFICATIONS Suitable qualifications include a degree, professional library qualifications and substantial administrative experience in the library-service centre of a tertiary institution. The applicant will require vision and adaptability to a challenging situation. Further particulars are available from the Registrar. CONDITIONS OF SERVICE In addition to salary a dental allowance of between A\$450 and A\$850 per annum dependent upon marital status is payable. Temporary and permanent accommodation is available after a waiting period. Air fare to Darwin for applicant and dependants, as well as removal of personal effects are applicable. Return air fares to an Australian state capital are payable every two years. APPLICATIONS Applicants should state full personal details, including age, qualifications, previous employment, present position, the names and addresses of three referees, a recent photograph and quote the position number in: The Registrar Darwin Community College, P.O. Box 40148, CAJAPURINA, NT, 5782, AUSTRALIA Closing date: 18th February, 1977.

HONGKONG POLYTECHNIC Invites applications for the post of Assistant Estate Officer (Services) HK\$69,420 x 6 increments, \$93,540 c.£8,650-£11,858 p.a. to be responsible to the Estates and Development Officer for: Liaison with the development architects for all services matters in connection with new buildings for the Polytechnic and future developments; providing performance specifications and making recommendations on all services matters concerning alterations works within the existing buildings; all matters in connection with the maintenance of building automation control, pumping stations, electrical and mechanical plants, lift/escalator plants and PABX systems in all Polytechnic buildings including staff housing. Candidates should have a degree or professional qualification in an appropriate discipline plus extensive practical experience, preferably in a tertiary education institution and have administrative and organisational skills. Appointment will be on a two year contract initially. Thereafter the appointee, if suitable, may be offered a further contract or permanent terms of service, at the discretion of the Polytechnic. Benefits include: pension, long leave, quarters, medical and dental benefits, education allowances and holiday visit passages for children, and a terminal gratuity equal to 25 per cent of basic salary received over the entire contract period. Further details and application form, which should be returned not later than 28 January 1977, are obtainable from the Recruitment Unit, ET/O (Technical Education and Training Organisation for Overseas Countries), 35/37 Grosvenor Gardens, London SW1W 0SS, (R) AEO(S)/THS. teloc